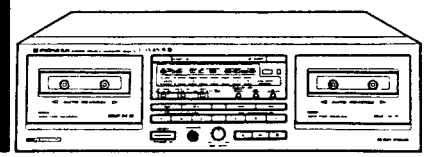
PIONEER
The Art of Entertainment

Service Manual



ORDER NO.
ARP2150

STEREO DOUBLE CASSETTE DECK

CT-W450R
CT-W355R
CT-W350R

CT-W450R, CT-W355R AND CT-W350R HAVE THE FOLLOWING:

Type	Model			Power Requirement	Remarks
	CT-W450R	CT-W355R	CT-W350R		
KUC	○	○	○	AC120V only	
KUCXJ	○	○	○	AC120V only	
HEMXJ	–	–	○	AC220–230V, 230–240V (switchable) *	
HB	–	–	○	AC220–230V, 230–240V (switchable) *	
HBXJ	–	–	○	AC220–230V, 230–240V (switchable) *	
HPWXJ	–	–	○	AC220–230V, 230–240V (switchable) *	
SDXJ	–	–	○	AC110V, 120–127V, 220V, 240V (switchable)	

* Change the primary wiring of the power transformer.

- **This manual is applicable to the CT-W450R/KUC, KUCXJ, CT-W355R/KUC, KUCXJ, CT-W350R/KUC, KUCXJ, HEMXJ, HB, HBXJ, HPWXJ and SDXJ types.**
- **As to the CT-W450R/KUCXJ, CT-W355R/KUC, KUCXJ, CT-W350R/KUC, KUCXJ, HEMXJ, HB, HBXJ, HPWXJ and SDXJ types, refer to page 41–44.**
- **Ce manuel pour le service comprend les explications de réglage en français.**
- **Este manual de servicio trata del método ajuste escrito en español.**

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SI MAR. 1991 Printed in Japan

CONTENTS

1. SAFETY INFORMATION 2
2. EXPLODED VIEWS, PACKING AND PARTS LIST 3
3. P.C. BOARDS CONNECTION DIAGRAM 19
4. SCHEMATIC DIAGRAM 23
5. PCB's PARTS LIST 26
6. ADJUSTMENTS 30
6. RÉGLAGE 33
6. AJUSTE 37
7. FOR CT-W450R/KUCXJ, CT-W355R/KUC, KUCXJ, CT-W350R/KUC, KUCXJ, HEMXJ, HB, HBXJ, HPWXJ AND SDXJ TYPES 41
8. SPECIFICATIONS 44
9. PANEL FACILITIES 46

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).
When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

1. SAFETY INFORMATION

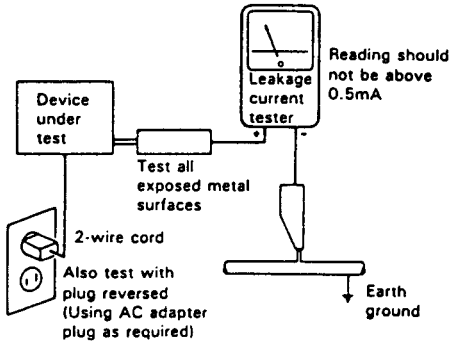
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.


Reading should not be above 0.5mA
Leakage current tester
Device under test
Test all exposed metal surfaces
2-wire cord
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

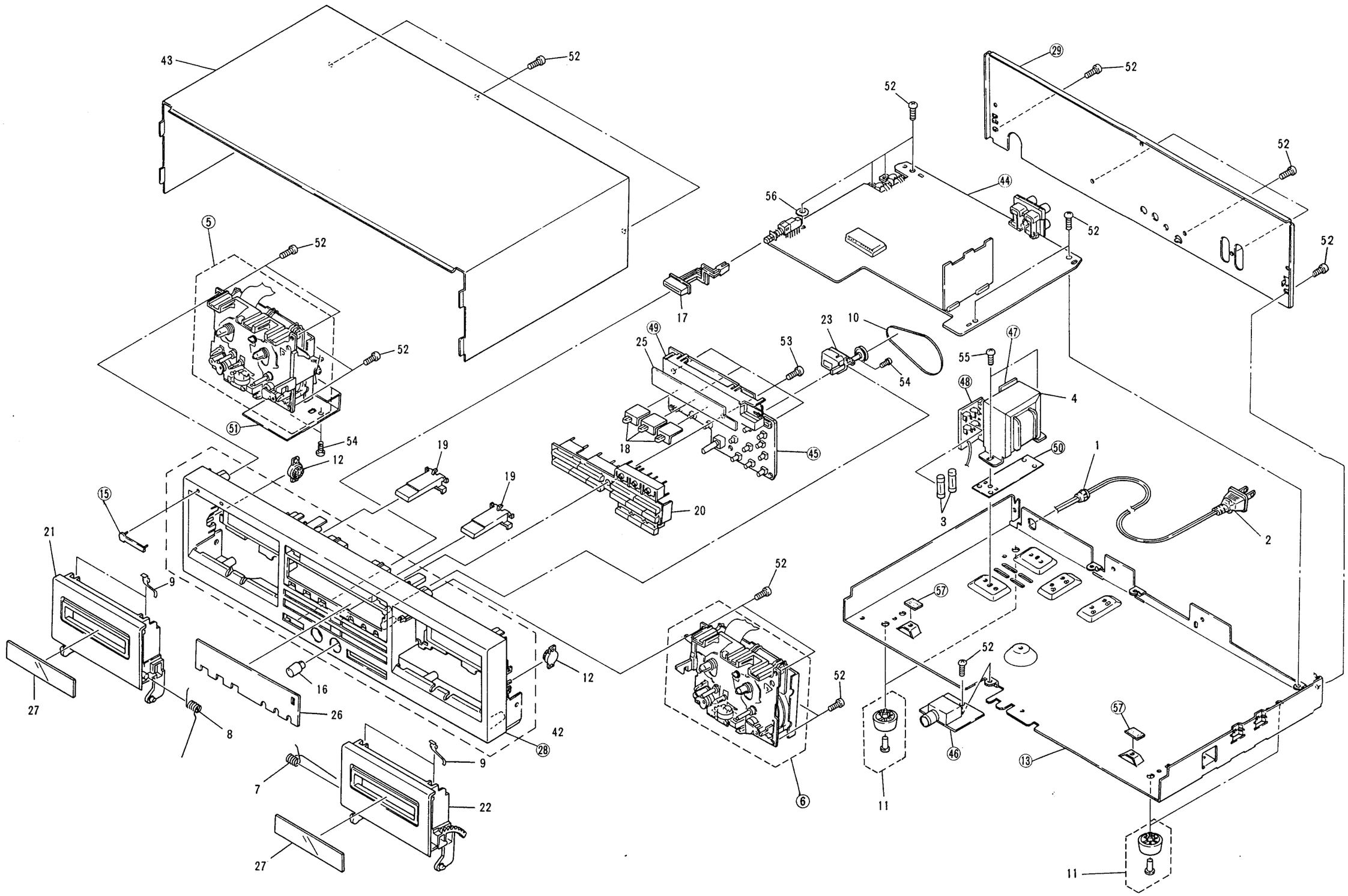
Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. EXPLODED VIEWS, PACKING AND PARTS LIST

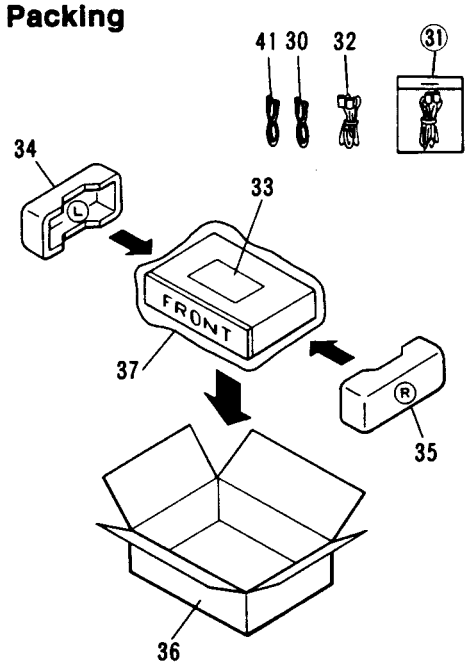
2.1 Exterior



Parts List

Mark	No.	Description	Part No.
⚠	1	STRAIN RELIEF	CM – 22
⚠	2	AC POWER CODE	RDG1010
⚠	3	FUSE (1.25A)	REK – 073
⚠	4	POWER TRANSFORMER	RTT1142
	5	MECHANISM UNIT (DECK I)	
	6	MECHANISM UNIT (DECK II)	
	7	DOOR SPRING L	RBH1254
	8	DOOR SPRING R	RBH1255
	9	HALF PRESSURE SPRING	RBK1004
	10	COUNTER BELT	REB1152
	11	LEG ASS'Y	REC – 369
	12	DAMPER ASSEMBLY	REC1005
	13	MAIN CHASSIS	
	14	CORD CLAMPER	RNH – 184
	15	NAME PLATE	
	16	VR KNOB (B)	RAC1421
	17	POWER KNOB	RAC1558
	18	SLIDE KNOB	RAC1559
	19	EJECT KNOB	RAC1560
	20	OPERATION KNOB	RAC1561
	21	DOOR POCKET (L)	RAH1751
	22	DOOR POCKET (R)	RAH1789
	23	COUNTER	RAW1001
	24	REMAIN DISPLAY PAPER	REE – 113
	25	METER PANEL	RAH1753
	26	METER LENS	RAH1882
	27	DOOR LENS	RAH1755
	28	FRONT PANEL	
	29	REAR PANEL	
	30	CONNECTION CORD (WITH MINI PLUG)	PDE – 319
	31	CONNECTION CORD ASSEMBLY	
	32	CONTROL CORD	RDE1018
	33	OPERATING INSTRUCTIONS	RRB1077
	34	PAD (L)	RHA1056
	35	PAD (R)	RHA1057
	36	PACKING CASE	RHG1228
	37	SHEET	RHX – 034
	38	SCREW	BBZ30P080FMC
	39	SCREW	BBZ30P080FMC
	40	.....	
	41	CONNECTION CORD	RDE – 010
	42	FRONT PANEL ASS'Y	RXX1347
	43	BONNET	RXX1351
	44	MAIN UNIT	
	45	SUB UNIT	
	46	H.PHONE UNIT	
	47	TRANS 1 UNIT	
	48	TRANS 2 UNIT	
	49	LED HOLDER	
	50	TRANS SHIELD PLATE	
	51	SHIELD PLATE	
	52	SCREW	BBZ30P080FMC
	53	SCREW	BBZ30P100FZK
	54	SCREW	BBZ20P060FMC
	55	SCREW	ARZ30P080FMC
	56	WASHER	WA30F150M080
	57	SPACER	

Packing

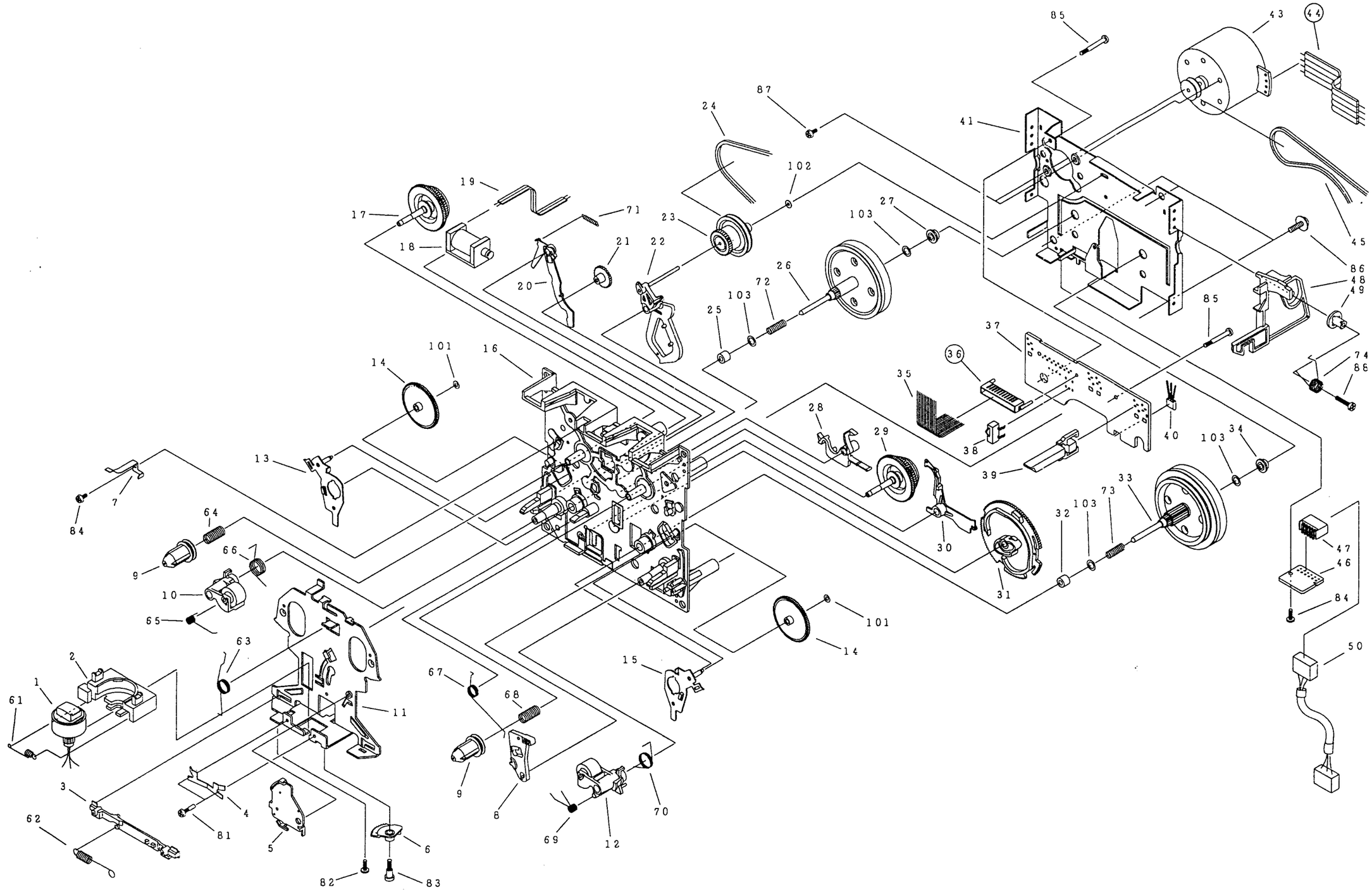


2.2 MECHANISM UNIT (DECK I) (For CT-W450R and CT-W350R types)

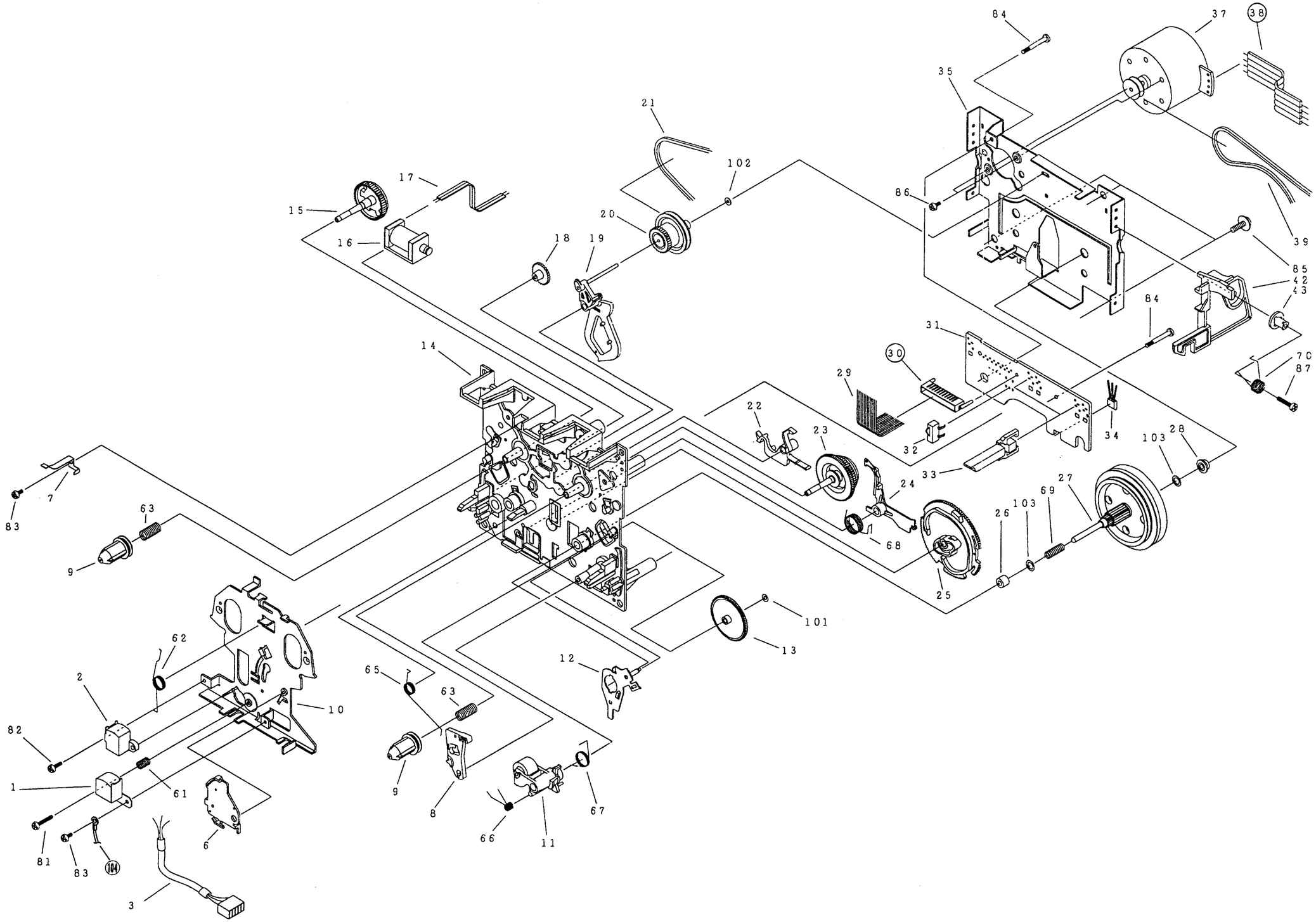
Parts List

Mark	No.	Description	Part No.
	1	ASS'Y HOLDER HEAD	RXA1400
	2	FLAME HEAD	RNK1715
	3	LEVER HEAD	RNK1716
	4	SPRING AZIMUTH	RBK1006
	5	ASS'Y ARM ASSIST	RXA1401
	6	GEAR ARM HEAD	RNK1717
	7	SPRING CASSETTE	RBK1039
	8	EJECT LOCK	RNK1718
	9	CAP REEL	RNK1719
	10	ASS'Y PINCH ARM L	RXA1403
	11	CHASSIS HEAD	RNE1437
	12	ASS'Y PINCH ARM R	RXA1404
	13	ASS'Y ARM PLAY L	RXA1405
	14	GEAR PLAY	RNK1720
	15	ASS'Y ARM PLAY R	RXA1406
	16	CHASSIS OS.	RXA1411
	17	ASS'Y SUB REEL L	RXA1407
⚠	18	SOLENOID	RXP1017
	19	WIRE	RDC1006
	20	ARM RVS	RNK1721
	21	GEAR FF	RNK1723
	22	ASS'Y ARM FR	RXA1412
	23	ASS'Y PULLEY FR	RXA1413
	24	BELT FR	REB1158
	25	METAL	RNG1048
	26	ASS'Y FLYWHEEL L (OTHERS)	RXA1409
		ASS'Y FLYWHEEL L (CT – W350R/HB, HBXJ, HEMXJ)	RXA1423
	27	METAL	RNG1005
	28	ARM BRAKE	RNK1724
	29	ASS'Y SUB REEL R	RXA1408
	30	ARM TRIGGER	RNK1722
	31	GEAR CAM	RNK1725
	32	METAL	RNG1049
	33	ASS'Y FLYWHEEL R (OTHERS)	RXA1410
		ASS'Y FLYWHEEL R (CT – W350R/HB, HBXJ, HEMXJ)	RXA1424
	34	METAL	RNG1004
	35	WIRE (12P)	RDD1216
	36	HOLDER WIRE	
	37	P.C. BOARD	RNP1347
	38	SWITCH MODE	RSN1020
	39	SWITCH (LEAF)	RSN1019
	40	HALL IC.	DN6851A
	41	BRACKET FW	RNE1438
	42	.....	
	43	ASS'Y MOTOR	RXM1052
	44	WIRE	
	45	BELT MAIN (OTHERS)	REB1159
		BELT MAIN (CT – W350R/HB, HBXJ, HEMXJ)	REB1162
	46	P.C. BOARD	RNP1348
	47	HOUSING	RKP1396
	48	EJECT LEVER R	RNK1703
	49	COLLAR	RNK1704
	50	WIRE HEAD	RKP1398
	61	SPRING	RBH1282
	62	SPRING	RBH1283
	63	SPRING	RBH1284
	64	SPRING	RBH1286
	65	SPRING	RBH1288
	66	SPRING	RBH1290
	67	SPRING	RBH1285
	68	SPRING	RBH1287
	69	SPRING	RBH1289
	70	SPRING	RBH1291
	71	SPRING	RBH1292
	72	SPRING	RBH1061
	73	SPRING	RBH1060
	74	SPRING	RBH1293
	81	SCREW	RBA1023
	82	SCREW	RBA1027
	83	SCREW	RBA1030
	84	SCREW	PCZ20P040FMC
	85	SCREW	RBA1093
	86	SCREW	RBA1094
	87	SCREW	RBA1086
	88	SCREW	RBA1095
	101	WASHER	RBF1044
	102	WASHER	WA16D032D025
	103	WASHER	WA26D047D013

Mechanism Unit (Deck I)
(For CT–W450R and CT–W350R types)



2.3 Mechanism Unit (DECK I)
(For CT-W355R type)



Parts List

Mark	No.	Description	Part No.
	1	R/P HEAD	RPB1026
	2	DUMMY HEAD	PNK1458
	3	WIRE HEAD	RKP1400
	6	ASS'Y ARM ASSIST	RXA1401
	7	SPRING CASSETTE	RBK1039
	8	EJECT LOCK	RNK1718
	9	CAP REEL	RNK1719
	10	CHASSIS HEAD	RNE1439
	11	ASS'Y PINCH ARM R	RXA1404
	12	ASS'Y ARM PLAY R	RXA1406
	13	GEAR PLAY	RNK1720
	14	CHASSIS OS.	RXA1417
	15	REEL GEAR	RNK1726
⚠	16	SOLENOID	RXP1017
	17	WIRE	RDC1006
	18	GEAR FF	RNK1723
	19	ASS'Y ARM FR	RXA1412
	20	ASS'Y PULLEY FR	RXA1413
	21	BELT FR	REB1158
	22	ARM BRAKE	RNK1724
	23	ASS'Y SUB REEL R	RXA1408
	24	ARM TRIGGER	RNK1722
	25	GEAR CAM	RNK1725
	26	METAL	RNG1049
	27	ASS'Y FLYWHEEL R	RXA1424
	28	METAL	RNG1004
	29	WIRE (12P)	RDD1216
	30	HOLDER WIRE	
	31	P.C. BOARD	RNP1347
	32	SWITCH MODE	RSN1020
	33	SWITCH (LEAF)	RSN1019
	34	HALL IC.	DN6851A
	35	BRACKET FW	RNE1438
	37	ASS'Y MOTOR	RXM1052
	38	WIRE	
	39	BELT MAIN	REB1160
	42	EJECT LEVER R	RNK1703
	43	COLLAR	RNK1704
	61	SPRING	RBH1296
	62	SPRING	RBH1284
	63	SPRING	RBH1286
	64	.....	
	65	SPRING	RBH1285
	66	SPRING	RBH1298
	67	SPRING	RBH1291
	68	SPRING	RBH1295
	69	SPRING	RBH1060
	70	SPRING	RBH1293

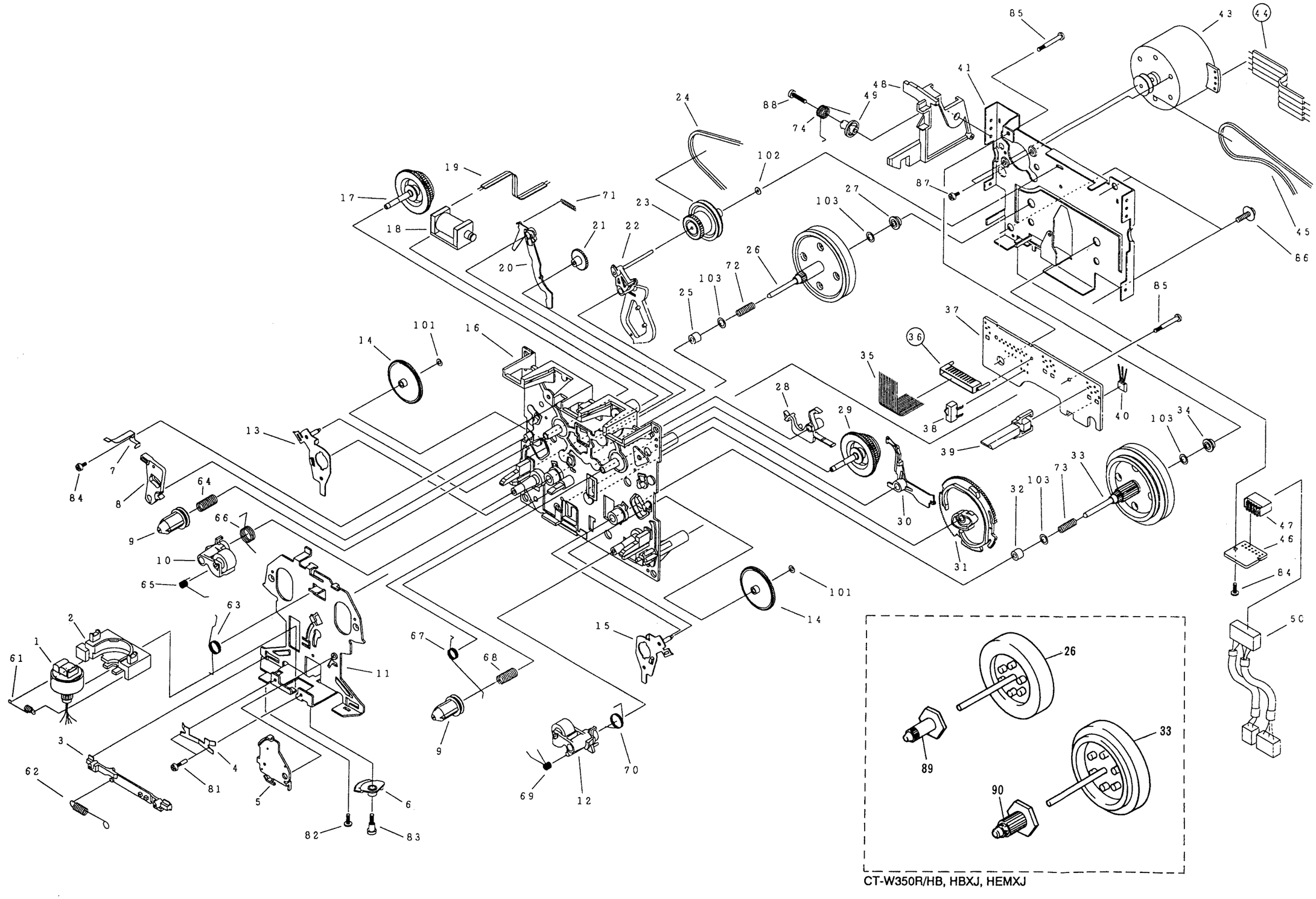
Mark	No.	Description	Part No.
	81	SCREW	RBA1096
	82	SCREW	RBA1029
	83	SCREW	PCZ20P040FMC
	84	SCREW	RBA1093
	85	SCREW	RBA1094
	86	SCREW	RBA1086
	87	SCREW	RBA1095
	101	WASHER	RBF1044
	102	WASHER	WA16D032D025
	103	WASHER	WA26D047D013
	104	LOG PLATE	

2.4 MECHANISM UNIT (DECK II)

Parts List

Mark	No.	Description	Part No.
	1	ASS'Y HOLDER HEAD	RXA1416
	2	FLAME HEAD	RNK1715
	3	LEVER HEAD	RNK1716
	4	SPRING AZIMUTH	RBK1006
	5	ASS'Y ARM ASSIST	RXA1401
	6	GEAR ARM HEAD	RNK1717
	7	SPRING CASSETTE	RBK1039
	8	EJECT LOCK	RNK1718
	9	CAP REEL	RNK1719
	10	ASS'Y PINCH ARM L	RXA1403
	11	CHASSIS HEAD	RNE1437
	12	ASS'Y PINCH ARM R	RXA1404
	13	ASS'Y ARM PLAY L	RXA1405
	14	GEAR PLAY	RNK1720
	15	ASS'Y ARM PLAY R	RXA1406
	16	CHASSIS OS.	RXA1411
	17	ASS'Y SUB REEL L	RXA1407
⚠	18	SOLENOID	RXP1017
	19	WIRE	RDC1006
	20	ARM RVS	RNK1721
	21	GEAR FF	RNK1723
	22	ASS'Y ARM FR	RXA1412
	23	ASS'Y PULLEY FR	RXA1413
	24	BELT FR	REB1158
	25	METAL	RNG1048
	26	ASS'Y FLYWHEEL L (OTHERS)	RXA1409
		ASS'Y FLYWHEEL L (CT – W350R/HB, HBXJ, HEMXJ)	RXA1414
	27	METAL	RNG1005
	28	ARM BRAKE	RNK1724
	29	ASS'Y SUB REEL R	RXA1408
	30	ARM TRIGGER	RNK1722
	31	GEAR CAM	RNK1725
	32	METAL	RNG1049
	33	ASS'Y FLYWHEEL R (OTHERS)	RXA1410
		ASS'Y FLYWHEEL R (CT – W350R/HB, HBXJ, HEMXJ)	RXA1415
	34	METAL	RNG1004
	35	WIRE (14P)	RDD1217
	36	HOLDER WIRE	
	37	P.C. BOARD	RNP1347
	38	SWITCH MODE	RSN1020
	39	SWITCH (LEAF)	RSN1019
	40	HALL IC.	DN6851A
	41	BRACKET FW	RNE1438
	42	.....	
	43	ASS'Y MOTOR(OTHERS)	RXM1052
		ASS'Y MOTOR (CT – W350R/HB, HBXJ, HEMXJ)	RXM1051
	44	WIRE	
	45	BELT MAIN (OTHERS)	REB1159
		BELT MAIN (CT – W350R/HB, HBXJ, HEMXJ)	REB1162
	46	P.C. BOARD	RNP1348
	47	HOUSING	RKP1397
	48	EJECT LEVER L	RNK1702
	49	COLLAR	RNK1704
	50	WIRE HEAD	RKP1399
	61	SPRING	RBH1282
	62	SPRING	RBH1283
	63	SPRING	RBH1284
	64	SPRING	RBH1286
	65	SPRING	RBH1288
	66	SPRING	RBH1290
	67	SPRING	RBH1285
	68	SPRING	RBH1287
	69	SPRING	RBH1289
	70	SPRING	RBH1291
	71	SPRING	RBH1292
	72	SPRING	RBH1061
	73	SPRING	RBH1060
	74	SPRING	RBH1294
	81	SCREW	RBA1023
	82	SCREW	RBA1027
	83	SCREW	RBA1030
	84	SCREW	PCZ20P040FMC
	85	SCREW	RBA1093
	86	SCREW	RBA1094
	87	SCREW	RBA1086
	88	SCREW	RBA1095
	89	GEAR FW L (CT – W350R/HB, HBXJ, HEMXJ)	RNK1732
	90	GEAR FW R (CT – W350R/HB, HBXJ, HEMXJ)	RNK1733
	101	WASHER	RBF1044
	102	WASHER	WA16D032D025
	103	WASHER	WA26D047D013

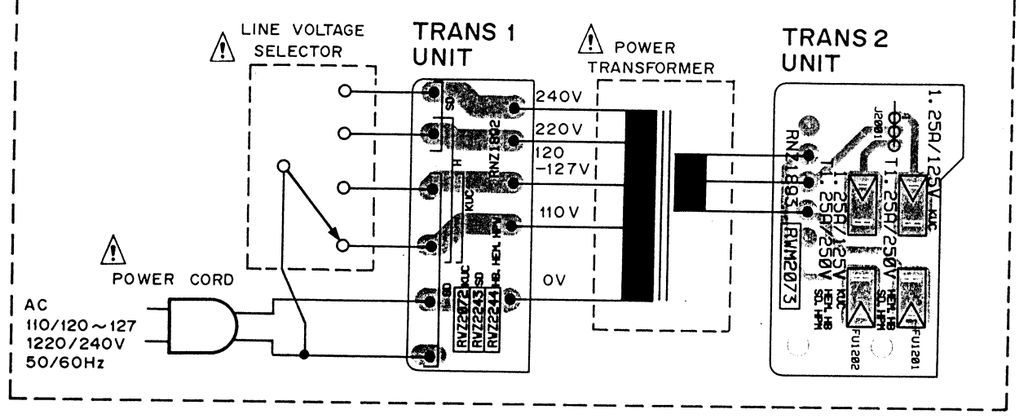
Mechanism Unit (Deck II)



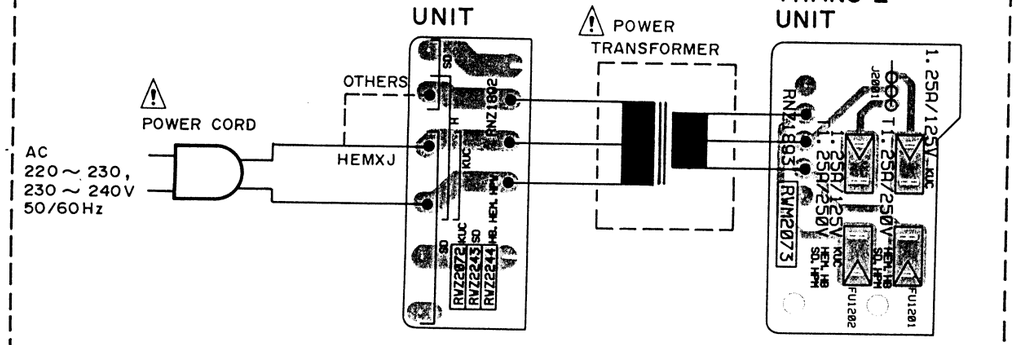
CT-W350R/HB, HBXJ, HEMXJ

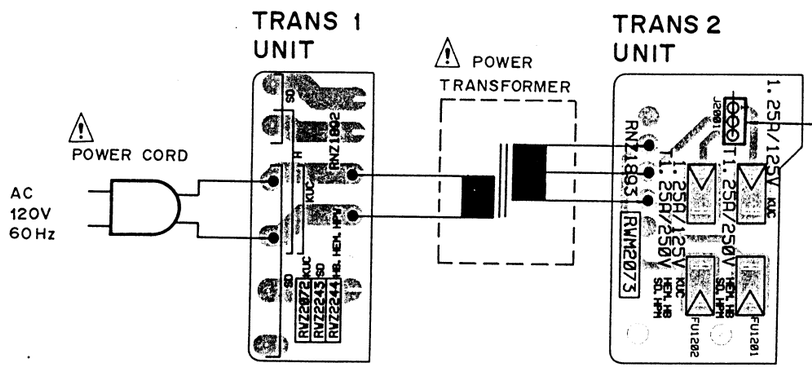
3. P.C. BOARDS CONNECTION DIAGRAM

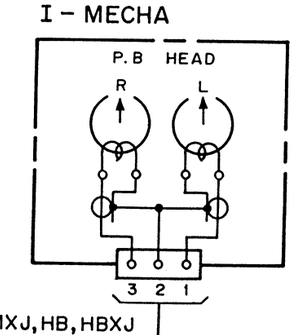
Power Supply Section for SDXJ Type.



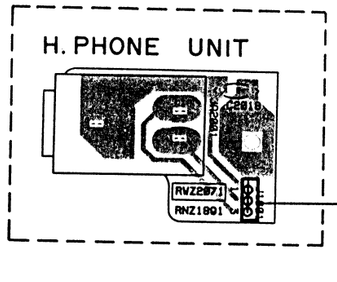
Power Supply Section for HEMXJ, HB, HBXJ and HPWXJ Types.

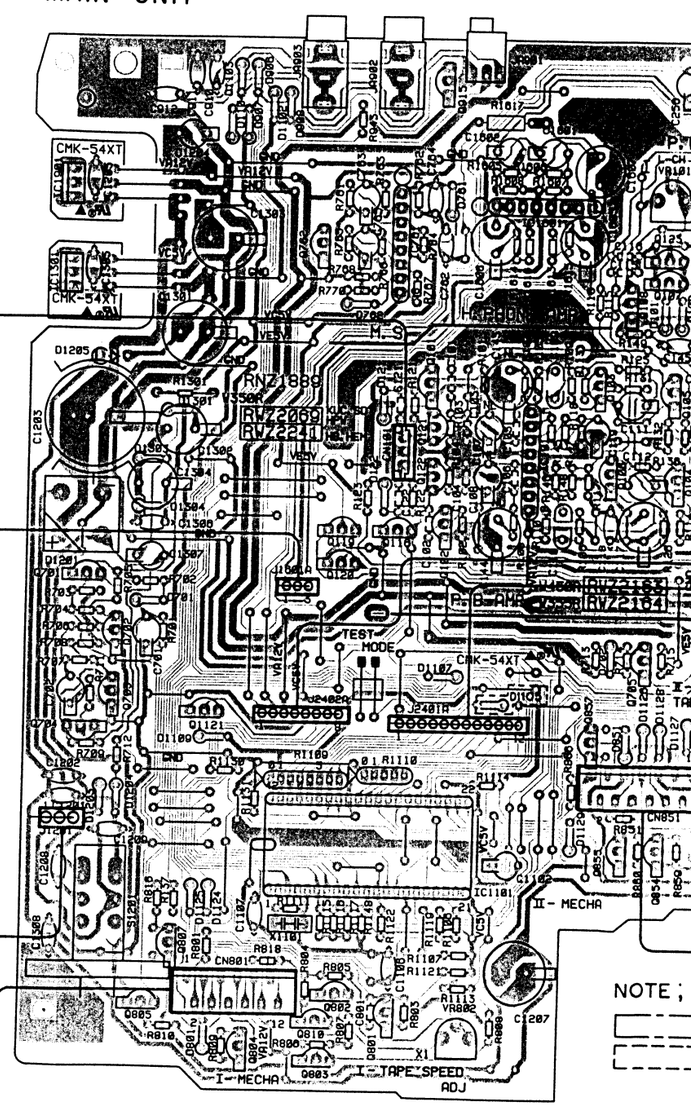






CT-W350R/HEMXJ,HB,HBXJ and CT-W450R ONLY

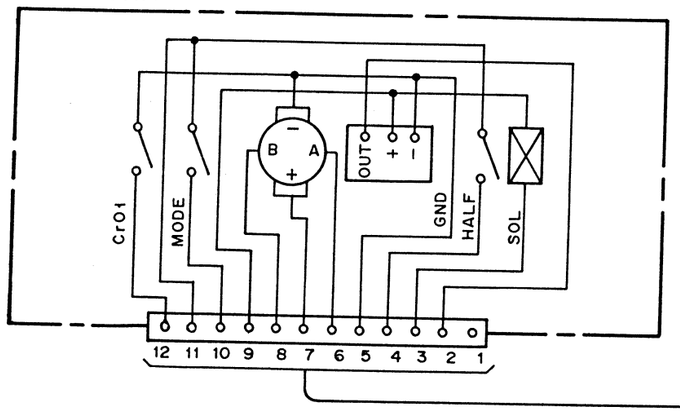


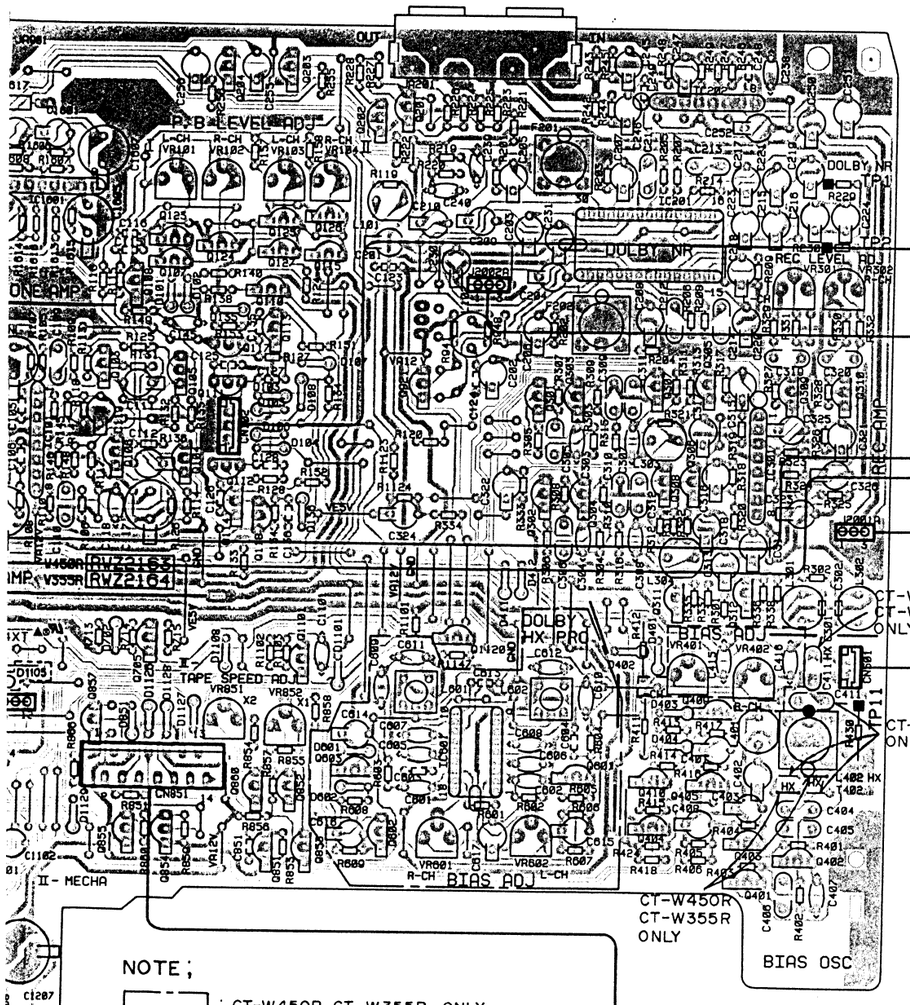


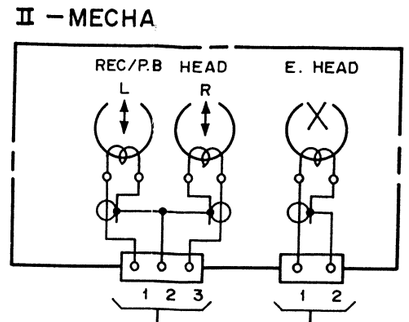
Line Voltage Selection

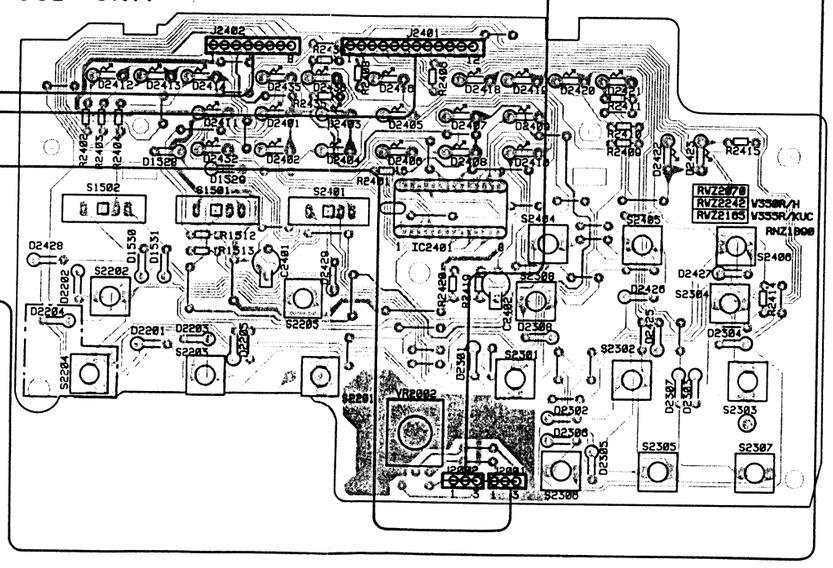
Line voltage can be changed with the following steps.
1. Disconnect the AC power cord.
2. Remove the top cover.
3. Change the connection of the TRNS 1 UNIT primary pins.
4. Stick the line voltage label on the rear panel.

Port NO.	Description
AXX-193	220V label
AXX-192	240V label





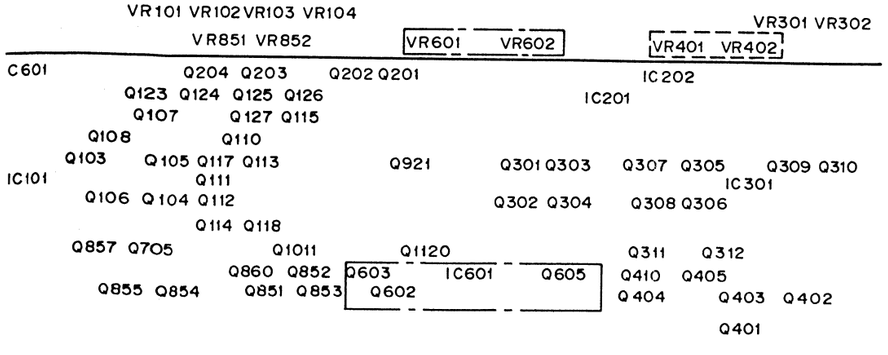




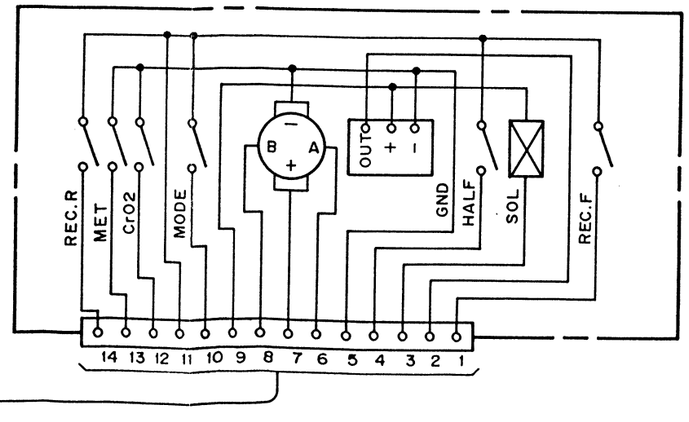
NOTE;

; CT-W450R, CT-W355R ONLY

; CT-W350R ONLY



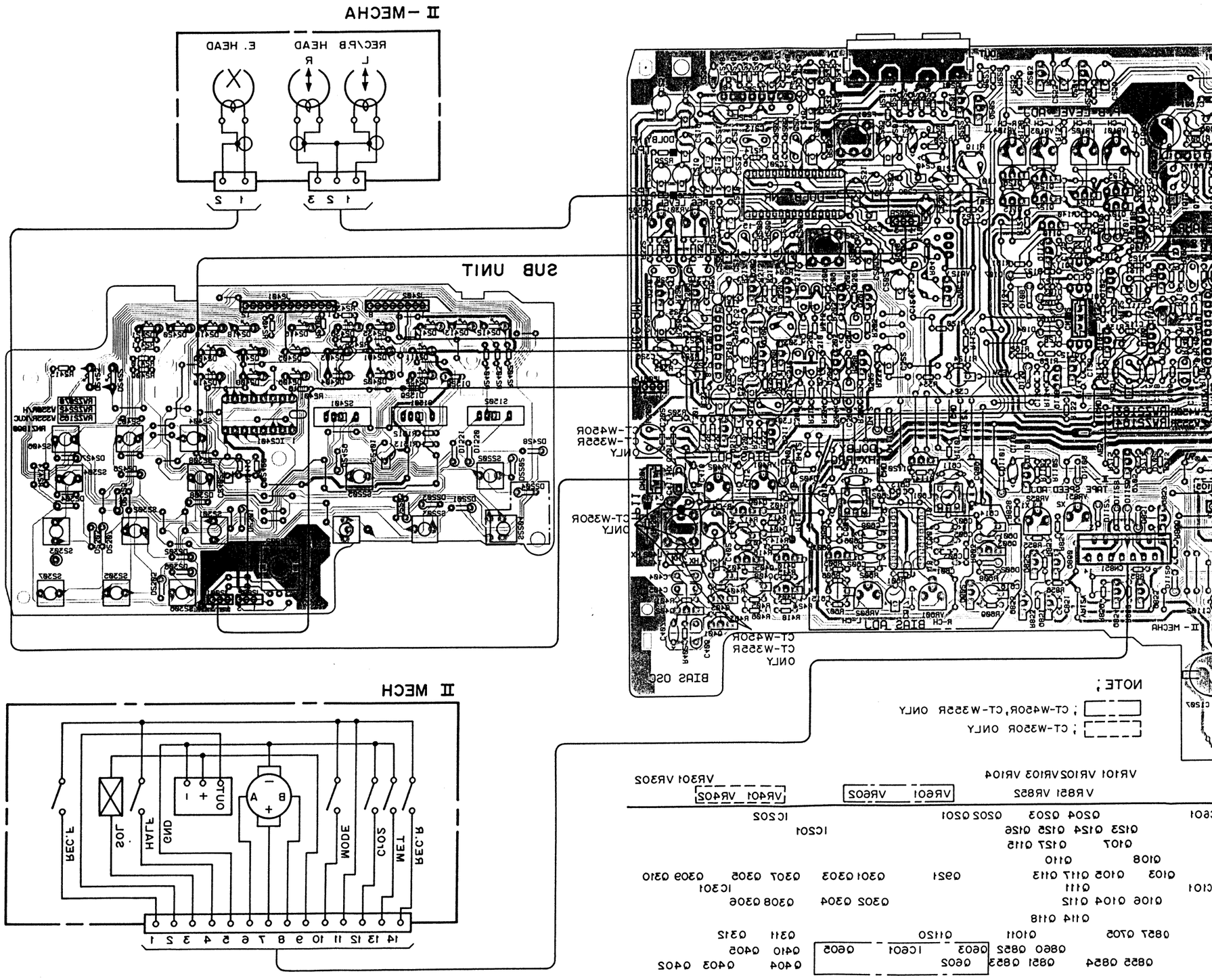
II MECH



P.C.B. pattern diagram indication	Corresponding part symbol	Part name
		Transistor
		FET
		Diode
		Zenner diode
		LED
		Varactor
		Tact switch
		Inductor
		Coil
		Transformer
		Filter
		Ceramic capacitor
		Mylar capacitor
		Styrol capacitor
		Electrolytic capacitor (Non polarized)
		Electrolytic capacitor (Noiseless)
		Electrolytic capacitor (Polarized)
		Electrolytic capacitor (Polarized)
		Power capacitor
		Semi-fixed resistor
		Resistor array
		Resistor
		Resonator
		Thermistor

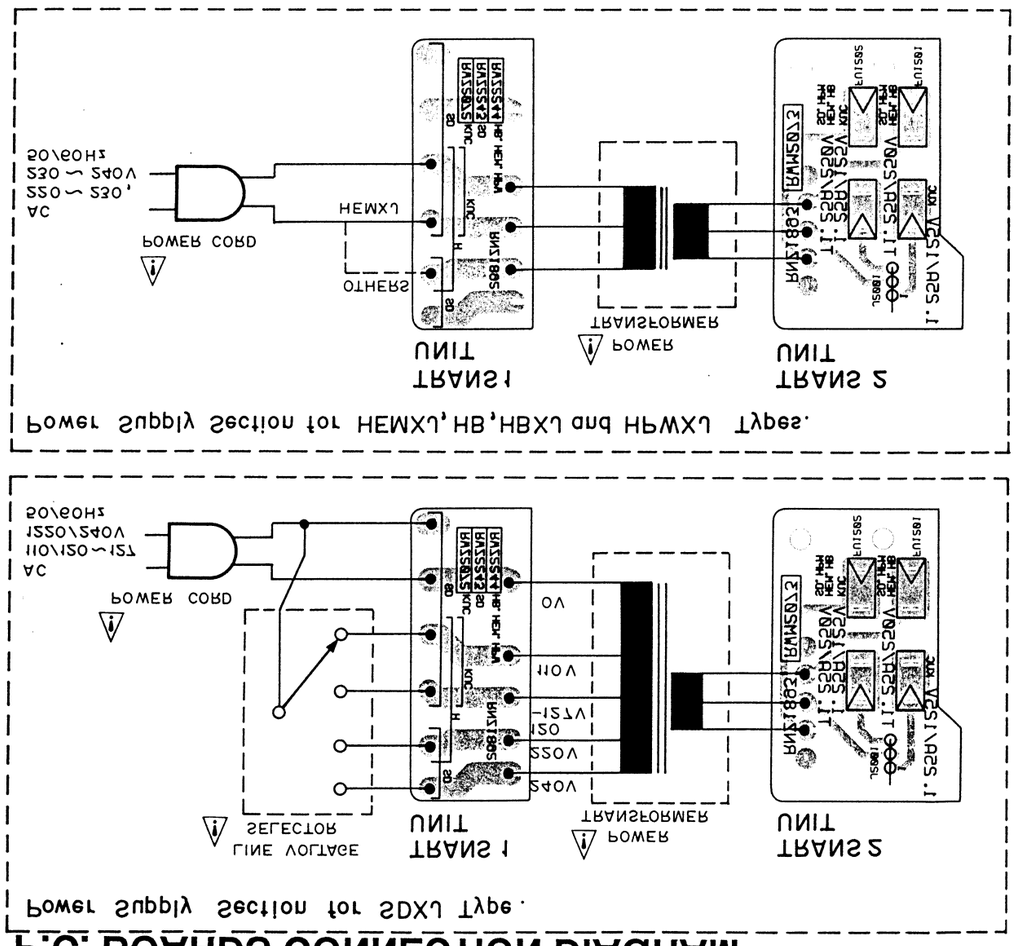
1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the above Table.
3. The capacitor terminal marked with ▭ shows negative terminal.
4. The diode marked with O shows cathode side.
5. The transistor terminal marked with ▭ shows emitter.

This P.C.B. connection diagram is viewed from the foil side.



3. P.C. BOARDS CONNECTION DIAGRAM

CT-W420R, CT-W322R, CT-W320R

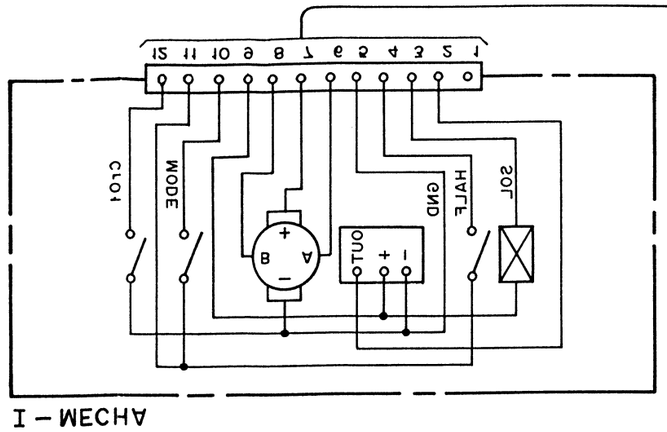


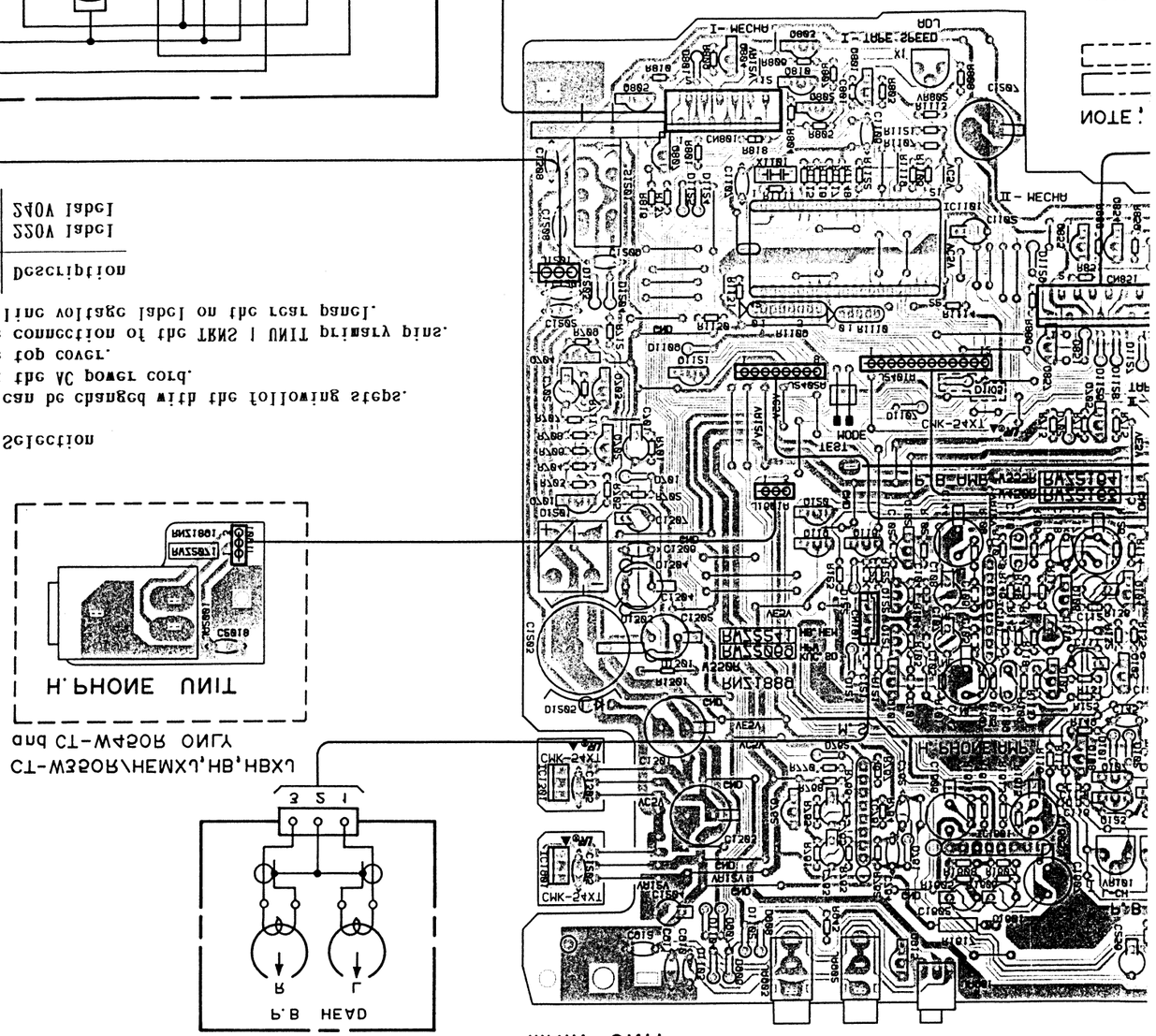
Line voltage can be changed with the following steps.

1. Disconnect the AC power cord.
2. Remove the top cover.
3. Change the connection of the TRNS 1 UNIT primary pins.
4. Check the line voltage input on the test panel.

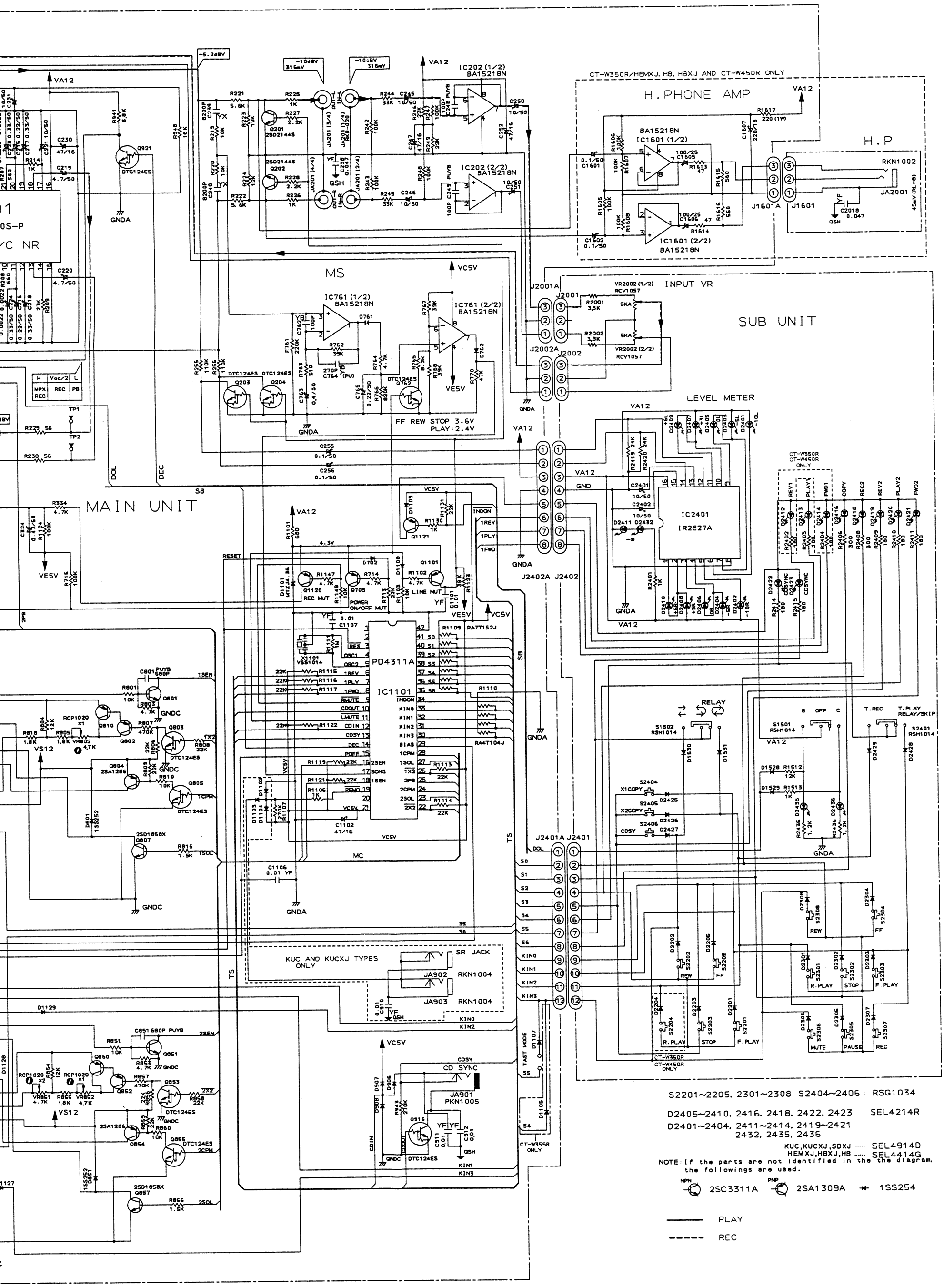
Port NO.	Description
CN802	220V Input
CN803	240V Input

Line Voltage Selection





4. SCHEMATIC DIAGRAM


CT-W350R/HEMXJ, HB, HBXJ AND CT-W450R ONLY
H.PHONE AMP
IC202 (1/2) BA15218N
IC202 (2/2) BA15218N
IC1601 (1/2) BA15218N
IC1601 (2/2) BA15218N
H.P
RKN1002
J1601A
J1601
J2001A
J2001
J2002A
J2002
INPUT VR
VR2002 (1/2) RCV1057
VR2002 (2/2) RCV1057
SUB UNIT
MS
IC761 (1/2) BA15218N
IC761 (2/2) BA15218N
FF REW STOP: 3.6V
PLAY: 2.4V
LEVEL METER
IC2401 IR2E27A
CT-W350R CT-W450R ONLY
MAIN UNIT
IC1101 PD4311A
RA7T152J
RA4T104J
RESET
MC
TS
SB
J2401A J2401
J2402A J2402
RELAY
S1501 RSH1014
S1502 RSH1014
S2401 RSH1014
T.REC
T.PLAY RELAY/SKIP
KUC AND KUCXJ TYPES ONLY
SR JACK
JA902 RKN1004
JA903 RKN1004
JA901 PKN1005
CD SYNC
CT-W355R ONLY
CT-W350R CT-W450R ONLY
S2201~2205, 2301~2308 S2404~2406 : RSG1034
D2405~2410, 2416, 2418, 2422, 2423 SEL4214R
D2401~2404, 2411~2414, 2419~2421 2432, 2435, 2436
KUC,KUCXJ,SDXJ SEL4914D
HEMXJ,HBXJ,HB SEL4414G
NOTE: If the parts are not identified in the the diagram, the followings are used.
NPN 2SC3311A
PNP 2SA1309A
1SS254
PLAY
REC

1. RESISTORS :
Indicated in Ω, 1/6W, ± 5 % tolerance unless otherwise noted
k ; kΩ, M ; MΩ, (F) ; ± 1 %, (G) ; ± 2%, (K) ; ± 10%, (M) ; ± 20 %
tolerance.

2. CAPACITORS :
Indicated in capacity (μ F) / voltage (V) unless otherwise noted p ; pF.
Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE CURRENT :
: DC voltage (V) at no input signal.
➡mA ; DC current at no input signal.

4. OTHERS :
➡ ; Signal route.
⊘ ; Adjusting point.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
※ marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

CT-W450R

5. P.C.B's PARTS LIST

NOTES:

- Parts without part number cannot be supplied.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%)

560 Ω → 56 × 10¹ → 561 ····· RD1/4PS 5 6 1 J
47k Ω → 47 × 10³ → 473 ····· RD1/4PS 4 7 3 J
0.5 Ω → 0R5 ····· RN2H 0 R 5 K
1 Ω → 010 ····· RS1P 0 1 0 K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω → 562 × 10¹ → 5621 ····· RN1/4SR 5 6 2 1 F

Mark	No.	Description	Part No.
SUB UNIT			
SEMICONDUCTORS			
	IC2401	LEVEL METER IC	IR2E27A
	D1528-1531	DIODE	1SS254
	D2201-2205	DIODE	1SS254
	D2301-2308	DIODE	1SS254
	D2401-2404	LED	SEL4914D
	D2405-2410	LED	SEL4214R
	D2411-2414	LED	SEL4914D
	D2416	LED	SEL4214R
	D2418	LED	SEL4214R
	D2419-2421	LED	SEL4914D
	D2422, 2423	LED	SEL4214R
	D2425-2429	DIODE	1SS254
	D2432	LED	SEL4914D
	D2435, 2436	LED	SEL4914D
SWITCHES			
	S1501, 1502	SWITCH	RSH1014
	S2201-2205	SWITCH	RSG1034
	S2301-2308	SWITCH	RSG1034
	S2401	SWITCH	RSH1014
	S2404-2406	SWITCH	RSG1034
CAPACITORS			
	C2401, 2402	ELECTR. CAPACITOR	CEAS100M50
RESISTORS			
	R1512, 1513	CARBONFILM RESISTOR	RD1/6PM□□□J
	R2401-2404	CARBONFILM RESISTOR	RD1/6PM□□□J
	R2406	CARBONFILM RESISTOR	RD1/6PM□□□J
	R2408-2411	CARBONFILM RESISTOR	RD1/6PM□□□J
	R2414, 2415	CARBONFILM RESISTOR	RD1/6PM□□□J
	R2001, 2002		RD1/6PM332J
	R2419, 2420	CARBONFILM RESISTOR	RD1/6PM□□□J
	R2435, 2436	CARBONFILM RESISTOR	RD1/6PM□□□J
	VR2002	VARIABLE RESISTOR(5K)	RCV1057

Mark	No.	Description	Part No.
H.PHONE UNIT			
CAPACITORS			
	C2018	CERAMIC CAPACITOR	CKCYF473Z50
OTHERS			
	JA2001	JACK	RKN1002
TRANS 1 UNIT			
There is no supply part in this unit.			
TRANS 2 UNIT			
There is no supply part in this unit.			
MAIN UNIT			
SEMICONDUCTORS			
	IC101	IC	BA15218N
	IC201	DOLBY B/C IC	CXA1330S
	IC202	IC	BA15218N
	IC301	IC	BA15218N
	IC601	DOLBY HX PRO IC	UPC1297CA
	IC761	IC	BA15218N
	IC1101	CPU	PD4311A
⚠	IC1301	REGULATOR IC	NJM78M05FA
	IC1601	IC	BA15218N
⚠	IC1901	REGULATOR IC	TA7812S
	Q101, 102	TRANSISTOR	DTC124ES
	Q103-106	TRANSISTOR	2SC3311A
	Q107, 108	TRANSISTOR	DTC124ES
	Q110	TRANSISTOR	DTA124ES
	Q111, 112	N-FET	2SK373
	Q113, 114	TRANSISTOR	2SC3311A
	Q115, 116	TRANSISTOR	DTC124ES
	Q117, 118	N-FET	2SK246
	Q119	TRANSISTOR	DTA124ES
	Q120	TRANSISTOR	DTC124ES
	Q121, 122	N-FET	2SK246
	Q123-126	DIGITAL TRANSISTOR	DTC114TS
	Q127	TRANSISTOR	DTC124ES
	Q201, 202	TRANSISTOR	2SD2144S

5. SWITCHES (Underline indicates switch position)

MAIN UNIT

S1201 : POWER — ON – OFF

SUB UNIT

S1501 : DOLBY — B – OFF – C

S1502 : RELAY — ⇄ – ⊇ – ↻

S2201 : F. PLAY
S2202 : REW
S2203 : STOP
S2204 : R. PLAY
S2205 : F.F
S2301 : R. PLAY
S2302 : STOP
S2303 : F. PLAY
S2304 : F.F
S2305 : PAUSE
S2306 : MUTE
S2307 : REC
S2308 : REW
S2401 : T. REC – T. PLAY RELAY/SKIP
S2404 : X1 COPY
S2405 : X2 COPY
S2406 : CDSY

Mark	No.	Description	Part No.
	Q203, 204	TRANSISTOR	DTC124ES
	Q301-308	TRANSISTOR	DTC114ES
	Q309-312	TRANSISTOR	2SD2144S
	Q401, 402	TRANSISTOR	2SC1815
	Q403	TRANSISTOR	2SD2144S
	Q404, 405	DIGITAL TRANSISTOR	DTC114TS
	Q409, 410	TRANSISTOR	2SB1238X
	Q601, 602	TRANSISTOR	2SA1309A
	Q603	TRANSISTOR	DTC124ES
	Q701	TRANSISTOR	2SA1309A
	Q702, 703	TRANSISTOR	2SC3311A
	Q704	TRANSISTOR	DTA114TS
	Q705	TRANSISTOR	2SA1309A
	Q762	TRANSISTOR	DTC124ES
	Q801	TRANSISTOR	2SC3311A
	Q802	TRANSISTOR	2SA1309A
	Q803	TRANSISTOR	DTC124ES
	Q804	TRANSISTOR	2SA1286
	Q805	TRANSISTOR	DTC124ES
	Q807	TRANSISTOR	2SD1858X
	Q810	TRANSISTOR	2SA1309A
	Q851	TRANSISTOR	2SC3311A
	Q852	TRANSISTOR	2SA1309A
	Q853	TRANSISTOR	DTC124ES
	Q854	TRANSISTOR	2SA1286
	Q855	TRANSISTOR	DTC124ES
	Q857	TRANSISTOR	2SD1858X
	Q860	TRANSISTOR	2SA1309A
	Q915	TRANSISTOR	DTC124ES
	Q921	TRANSISTOR	DTC124ES
	Q1101	TRANSISTOR	2SA1309A
	Q1120, 1121	TRANSISTOR	2SA1309A
	D101-108	DIODE	1SS254
	D121, 122	DIODE	1SS254
	D135, 136	DIODE	1SS254
	D401	DIODE	1SS254
	D402	DIODE	1SS252
	D403, 404	DIODE	1SS254
	D411, 412	DIODE	1SS254
	D601, 602	DIODE	1SS254
	D701, 702	DIODE	1SS254
	D761, 762	DIODE	1SS254
	D801	DIODE	1SS252
	D851	DIODE	1SS252
	D906-908	DIODE	1SS254
	D1101	ZENER DIODE	MTZJ4.3B
	D1102-1104	DIODE	1SS254
	D1107-1109	DIODE	1SS254
	D1124-1129	DIODE	1SS254
⚠	D1201		S2VB20
	D1203, 1204	DIODE	1SS254
⚠	D1205	DIODE	1SR35-100AVL
⚠	D1301	DIODE	1SS252
⚠	D1303	DIODE	1SS252

Mark	No.	Description	Part No.
⚠	D1304	ZENER DIODE	MTZJ5.1B
SWITCHES			
⚠	S1201	SWITCH	RSA-069
COILS/TRANSFORMERS			
	L101, 102	COIL	RTF1099
	L301, 302	COIL	RTF1102
	L303, 304	COIL	RTF1124
	L401	RADIAL INDUCTOR	LRA121K
	L402	COIL	RTD1063
	L601, 602	COIL	RTD1046
	F201, 202	FILTER	RTF1062
CAPACITORS			
	C101, 102	AXIAL CAPACITOR	CKPUYB331K50
	C103, 104	AXIAL CAPACITOR	CKPUYB391K50
	C105, 106	AXIAL CAPACITOR	CKPUYB101K50
	C107, 108	ELECTR. CAPACITOR	CEANL100M16
	C109, 110	AUDIO FILM CAPACITOR	CFTXA682J50
	C111, 112	ELECTR. CAPACITOR	CEAS100M50
	C115, 116	CERAMIC CAPACITOR	CKPUYB102K50
	C117	ELECTR. CAPACITOR	CEAS101M25
	C118	CERAMIC CAPACITOR	CKCYF103Z50
	C119	ELECTR. CAPACITOR	CEAS470M16
	C121, 122	AXIAL CERAMIC C.	CCPUSL100J50
	C123, 124	AXIAL CAPACITOR	CKPUYB391K50
	C125, 126	CERAMIC CAPACITOR	CCCSL331J50
	C127, 128	AXIAL CERAMIC C.	CCPUSL100J50
	C135, 136	AXIAL CERAMIC C.	CCPUSL100J50
	C143, 144	ELECTR. CAPACITOR	CEANL220M16
	C145	CERAMIC CAPACITOR	CKCYF103Z50
	C201-204	ELECTR. CAPACITOR	CEAS010M50
	C205, 206	ELECTR. CAPACITOR	CEAS100M50
	C207, 208	ELECTR. CAPACITOR	CEAS010M50
	C209, 210	ELECTR. CAPACITOR	CEAS4R7M50
	C211-214	AUDIO FILM CAPACITOR	CFTXA222J50
	C215, 216	ELECTR. CAPACITOR	CEASR22M50
	C217, 218	ELECTR. CAPACITOR	CEASR33M50
	C219, 220	ELECTR. CAPACITOR	CEAS4R7M50
	C221	ELECTR. CAPACITOR	CEAS100M50
	C223, 224	ELECTR. CAPACITOR	CEASR33M50
	C230	ELECTR. CAPACITOR	CEAS470M16
	C231	ELECTR. CAPACITOR	CEAS100M50
	C238	CERAMIC CAPACITOR	CKCYF473Z50
	C239, 240	CERAMIC CAPACITOR	CGCYX822K25
	C245, 246	ELECTR. CAPACITOR	CEAS100M50
	C247	ELECTR. CAPACITOR	CEAS470M16
	C248, 249	AXIAL CAPACITOR	CKPUYB101K50
	C250, 251	ELECTR. CAPACITOR	CEAS100M50
	C252	ELECTR. CAPACITOR	CEAS470M16
	C255, 256	ELECTR. CAPACITOR	CEASR10M50
	C301, 302	AXIAL CAPACITOR	CKPUYB221K50
	C303, 304	CERAMIC CAPACITOR	CGCYX472K25
	C305, 306	CERAMIC CAPACITOR	CGCYX183K25
	C307, 308	CERAMIC CAPACITOR	CGCYX123K25

Mark	No.	Description	Part No.
	C309, 310	CERAMIC CAPACITOR	CGCYX272K25
	C311, 312	CERAMIC CAPACITOR	CGCYX472K25
	C313, 314	ELECTR. CAPACITOR	CEAS4R7M50
	C315, 316	ELECTR. CAPACITOR	CEASR22M50
	C317, 318	ELECTR. CAPACITOR	CEAS100M50
	C319, 320	AUDIO FILM CAPACITOR	CFTXA332J50
	C321	ELECTR. CAPACITOR	CEAS470M16
	C322	ELECTR. CAPACITOR	CEAS010M50
	C323	ELECTR. CAPACITOR	CEAS470M16
	C324	ELECTR. CAPACITOR	CEASR47M50
	C325, 326	ELECTR. CAPACITOR	CEAS010M50
	C401	ELECTR. CAPACITOR	CEAS100M50
	C402, 403	ELECTR. CAPACITOR	CEAS470M16
	C404	AUDIO FILM CAPACITOR	CFTXA223J50
	C405-407	AUDIO FILM CAPACITOR	CFTXA332J50
	C408	ELECTR. CAPACITOR	CEAS470M16
	C411	CAPACITOR	CQPA682J100
	C601, 602	AUDIO FILM CAPACITOR	CFTXA103J50
	C603, 604	AXIAL CAPACITOR	CKPUYB821K50
	C605, 606	AUDIO FILM CAPACITOR	CFTXA223J50
	C607, 608	CERAMIC CAPACITOR	CGCYX473K25
	C609, 610	CERAMIC CAPACITOR	CCCSL101K500
	C611, 612	CERAMIC CAPACITOR	RCG1005
	C613	AXIAL CERAMIC C.	CCPUSL100J50
	C614	ELECTR. CAPACITOR	CEASR10M50
	C615	ELECTR. CAPACITOR	CEAS100M50
	C616	ELECTR. CAPACITOR	CEAS4R7M50
	C617	ELECTR. CAPACITOR	CEAS100M50
	C701	ELECTR. CAPACITOR	CEAS4R7M50
	C702	ELECTR. CAPACITOR	CEAS470M16
	C762	AXIAL CAPACITOR	CKPUYB101K50
	C763	ELECTR. CAPACITOR	CEASR47M50
	C764	AXIAL CAPACITOR	CKPUYB271K50
	C765	ELECTR. CAPACITOR	CEASR22M50
	C801	AXIAL CAPACITOR	CKPUYB681K50
	C851	AXIAL CAPACITOR	CKPUYB681K50
	C910-912	CERAMIC CAPACITOR	CKCYF103Z50
	C1101	CERAMIC CAPACITOR	CKCYF103Z50
	C1102	ELECTR. CAPACITOR	CEAS470M16
	C1106, 1107	CERAMIC CAPACITOR	CKCYF103Z50
	C1201, 1202	CERAMIC CAPACITOR	CKCYF473Z50
	C1203	ELECTR. CAPACITOR	CEAS222M35
	C1204	ELECTR. CAPACITOR	CEAS221M16
	C1205	AUDIO FILM CAPACITOR	CFTXA104J50
	C1207	ELECTR. CAPACITOR	CEAS222M16
	C1208, 1209	CERAMIC CAPACITOR	CKCYF473Z50
	C1301	ELECTR. CAPACITOR	CEAS222M16
	C1302	ELECTR. CAPACITOR	CEAS221M16
	C1303	ELECTR. CAPACITOR	CEAS102M16
	C1304	ELECTR. CAPACITOR	CEAS221M16
	C1305	CERAMIC CAPACITOR	CKCYF473Z50
	C1306	CERAMIC CAPACITOR	CKCYF103Z50
	C1307	ELECTR. CAPACITOR	CEAS100M50
	C1308	CERAMIC CAPACITOR	CKCYF473Z50
	C1601, 1602	ELECTR. CAPACITOR	CEASR10M50
	C1605, 1606	ELECTR. CAPACITOR	CEAS101M25
	C1607	ELECTR. CAPACITOR	CEAS221M16

RESISTORS

	R101-110	CARBONFILM RESISTOR	RD1/6PM□□□J
	R113-128	CARBONFILM RESISTOR	RD1/6PM□□□J
	R131-136	CARBONFILM RESISTOR	RD1/6PM□□□J
	R138	CARBONFILM RESISTOR	RD1/6PM□□□J
	R140	CARBONFILM RESISTOR	RD1/6PM□□□J
	R157, 158		RD1/6PM152J
	R145-149	CARBONFILM RESISTOR	RD1/6PM□□□J
	R151-154	CARBONFILM RESISTOR	RD1/6PM□□□J
	R201-209	CARBONFILM RESISTOR	RD1/6PM□□□J
	R214	CARBONFILM RESISTOR	RD1/6PM□□□J
	R229, 230(56Ω)		RCN1029
	R219-228	CARBONFILM RESISTOR	RD1/6PM□□□J
	R242-249	CARBONFILM RESISTOR	RD1/6PM□□□J
	R255, 256	CARBONFILM RESISTOR	RD1/6PM□□□J
	R301-338	CARBONFILM RESISTOR	RD1/6PM□□□J
	R401-406	CARBONFILM RESISTOR	RD1/6PM□□□J
	R411	CARBONFILM RESISTOR	RD1/2LF□□□J
	R412	CARBONFILM RESISTOR	RD1/2LF□□□J
	R413-418	CARBONFILM RESISTOR	RD1/6PM□□□J
	R424	CARBONFILM RESISTOR	RD1/6PM□□□J
	R430	CARBONFILM RESISTOR	RD1/2LF□□□J
	R601-609	CARBONFILM RESISTOR	RD1/6PM□□□J
	R701-709	CARBONFILM RESISTOR	RD1/6OM□□□J
	R711-715	CARBONFILM RESISTOR	RD1/6PM□□□J
	R761-768	CARBONFILM RESISTOR	RD1/6PM□□□J
	R770	CARBONFILM RESISTOR	RD1/6PM□□□J
	R801	CARBONFILM RESISTOR	RD1/6PM□□□J
	R803	CARBONFILM RESISTOR	RD1/6PM□□□J
	R804, 805		RN1/6PQ□□□□F
	R806-810	CARBOMFILM RESISTOR	RD1/6PM□□□J
	R816	CARBONFILM RESISTOR	RD1/6PM□□□J
	R818	CARBONFILM RESISTOR	RN1/6PQ□□□□F
	R851	CARBONFILM RESISTOR	RD1/6PM□□□J
	R853	CARBONFILM RESISTOR	RD1/6PM□□□J
	R854, 855		RN1/6PQ□□□□F
	R856-860	CARBONFILM RESISTOR	RD1/6PM□□□J
	R866	CARBONFILM RESISTOR	RD1/6PM□□□J
	R941	CARBONFILM RESISTOR	RD1/6PM□□□J
	R943	CARBONFILM RESISTOR	RD1/6PM□□□J
	R948	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1101-1103	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1106, 1107	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1109	RESISTOR ARRAY(1.5K)	RA7T152J
	R1110	RESISTOR ARRAY (100K)	RA4T104J
	R1111	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1113-1117	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1119	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1121-1124	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1130, 1131	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1147, 1148	CARBONFILM RESISTOR	RD1/6PM□□□J

Mark	No.	Description	Part No.
⚠	R1301	CARBONFILM RESISTOR	RD1/2LF□□□J
	R1605-1608	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1613-1616	CARBONFILM RESISTOR	RD1/6PM□□□J
	R1617		RS1LF221J
	VR101, 102	VR(10K)	RCP1045
	VR301, 302	VR(22K)	RCP1046
	VR601, 602	VR(22K)	RCP1046
	VR802	VR(4.7K)	RCP1020
	VR103, 104	VR(22K)	RCP1046
	VR851, 852	VR(4.7K)	RCP1020
OTHERS			
	CN801	CONNECTOR(12P)	KPE12
	CN851	CONNECTOR(14P)	KPE14
	JA201	JACK	RKB-020
	JA901	JACK	PKN1005
	JA902, 903	JACK	RKN1004
	X1101	CERAMIC RESONATOR	VSS1014

6. ADJUSTMENTS

6.1 MECHANICAL ADJUSTMENT

These adjustments must be performed in the TEST MODE.
- Entering the TEST MODE
  Set the Reverse Mode Switch to ⇔, and short the TEST MODE jumper wire.
- Releasing the TEST MODE
  Press the STOP keys of DECKs I and II simultaneously.

1. Tape Speed Adjustment and Check

No.	Deck	Mode	Test tape	Adjusting points	Specifications/Ratings (playback frequency)	Remarks
1	I	Normal speed PLAY	STD-301 (3 kHz)	Play back for 1 minute and then press the FF key. *1		
2		Double speed PLAY		check	6000 Hz ±600 Hz	
3		Normal speed PLAY		Press the FF key after checking.		
4	II			Play back for 1 minute and then press the FF key. *1		
5		Double speed PLAY		VR851	Within ±10Hz of step 2 (deck I) check value.	
6		Normal speed PLAY		Press the FF key after checking.		
7	I			VR802	3000 Hz ±5 Hz	
8	II			VR852	Within ±5 Hz of step 7 (deck I) adjustment value.	

*1: If the FF key is pressed during PLAY, double speed mode is selected.

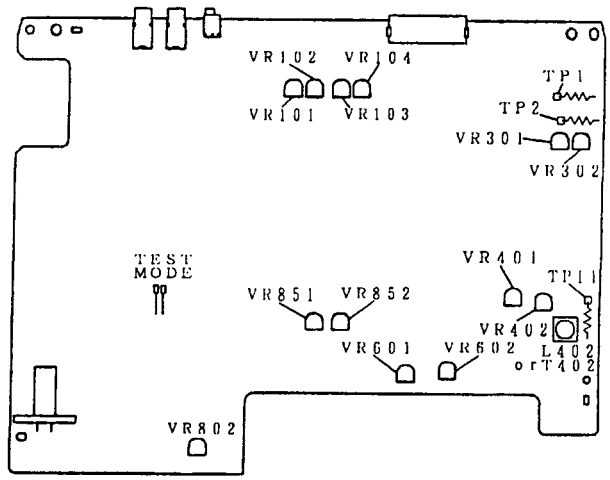


Fig. 6-1 Adjusting points

- Door damping check and adjustment

1. Attach the door spring at position (b) according to fig. 6-2. and stand the front panel assembly straight up as shown in fig. 6-3.
2. Open the doors of DECK I and DECK II simultaneously, and when one of the doors is fully opend, confirm that the difference between the two doors is within 15 mm.
3. If the specification described in steps 1 and 2 above is not satisfied, change the door spring position as follows and adjust.

- When the door of DECK I opens slower than the one of DECK II: Change the DECK II door spring to position (a).
- When the door of DECK I opens faster than the one of DECK II: Change the DECK I door spring to position (a).

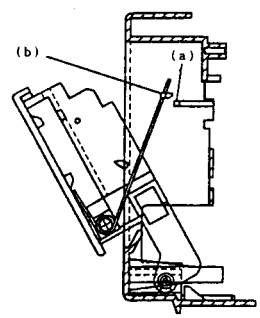


Fig. 6-2

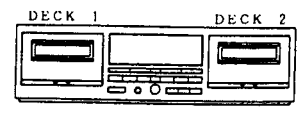


Fig. 6-3

6.2 ELECTRICAL ADJUSTMENTS

Adjustment Conditions

1. The mechanical adjustments must be completed first.
2. The head must be cleaned and demagnetized.
3. Turn power on allow the deck to warm up for at least a few minutes before commencing any electrical adjustments.
4. The reference signal is 0dBv=1Vrms.
5. Connect a 50 kΩ (or between 47k to 52 kΩ) load resistance to the OUTPUT terminals.
6. Unless otherwise specified, the switches listed below are left in the positions indicated.
   DOLBY NR : OFF
   TAPE SELECTOR : NORM

Test Tapes

STD-331B : Playback adjustments (See Fig. 6-4)
STD-630 : NORMAL blank tape
STD-620 : CrO_2 blank tape
STD-610 : METAL blank tape

List of Adjustments

Playback sections

1. Head azimuth adjustment.
2. Playback level adjustment.

Recording sections

1. Bias oscillator adjustment.
2. Recording bias adjustment.
3. Recording level adjustment.
4. Level meter check.

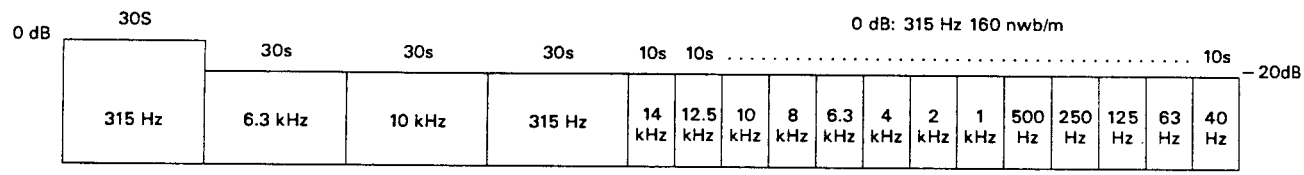
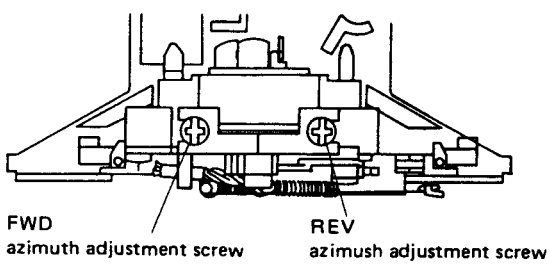


Fig. 6-4 Constants of the test tape STD-331B

CT-W450R, CT-W355R(Deck II), CT-W350R



CT-W355R(Deck I)

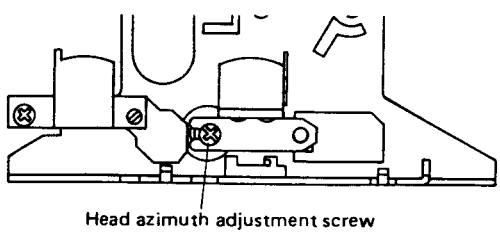


Fig. 6-5 Head azimuth adjustment

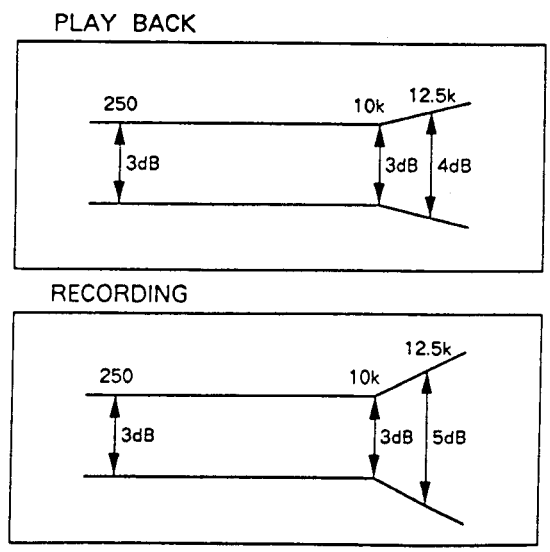


Fig. 6-6 Frequency response zone

PLAYBACK SECTION

1. Head Azimuth Adjustment

• Turn VR101, 102 (Deck I) or VR103, 104 (Deck II) to mechanical center positions.

No.	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.	PLAY	Play the 10 kHz/−20 dB section of STD-331B test tape.	Head azimuth adjustment screw. (See Fig. 6-5)	LINE OUT	Maximum playback signal level.	
2.	STOP	Lock the screw with screw lock after completing adjustment.				

2. Playback level Adjustment

• This adjustment determines the DOLBY NR level, and must be performed with great care.

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	PLAY	Play the 315 Hz/0 dB section of the STD-331B test tape.	Deck I	VR101 (Lch) VR102 (Rch)	TP. 1 (Lch) TP. 2 (Rch)	−10.7 dBv	
			Deck II	VR103 (Lch) VR104 (Rch)			

RECORDING SECTION

NOTE: *1: Others *2: CT-W350R

1. Bias Oscillator Adjustment

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	REC	Load the STD-610 test tape with no input signal.	Deck II	L402 *1 T402 *2	TP. 11	Maximum output (maximum AC voltage)	

2. Recording Bias Adjustment

• After the adjustment, caution should be exercised so as not to become under bias by checking the distortion rate.

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	STOP	Set the TAPE SELECTOR switch to the NORM position.					
2.	REC	Record the 315 Hz and 6.3 kHz signals at −20 dBv input level and playback.	Deck II	VR601 (Lch) *1 VR602 (Rch)	LINE OUT	Repeatedly record, playback and adjust so that the playback level of 6.3 kHz signal becomes +0.5 dB±0.5 dB when compared with the 315 Hz signal.	
				VR401 (Lch) *2 VR402 (Rch)			

3. Recording Level Adjustment

No.	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	STOP	Set the TAPE SELECTOR switch to the NORM position.					
2.	REC PAUSE	Apply a 315 Hz/0 dBv signal to the line input terminals, load the STD-630 test tape.	Rec Level control volume		TP. 1 (Lch) TP. 2 (Rch)	−11.2 dBv	
3.	STOP	Set the DOLBY NR switch to the ON position. (DOLBY B)					
4.	REC/ PLAY	Record the above signal onto the STD-630 test tape, and playback.	Deck II	VR301 (Lch) VR302 (Rch)	TP. 1 (Lch) TP. 2 (Rch)	Repeatedly record, playback and adjust so that the playback signal level becomes −11.2 dB.	
5.	STOP	Set the TAPE SELECTOR switch to the CrO_2 position.					
6.	REC/ PLAY	Record the above signal onto the STD-620 test tape, and playback.	Check		TP. 1 (Lch) TP. 2 (Rch)	−11.2 dBv ±1.5 dB	
7.	STOP	Set the TAPE SELECTOR switch to the METAL position.					
8.	REC/ PLAY	Record the above signal onto the STD-610 test tape, and playback.	Check		TP. 1 (Lch) TP. 2 (Rch)	−11.2 dBv ±1.5 dB	

4. Level Meter Check

No.	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.	REC PAUSE	Apply a 315 Hz/−10 dBv (316 mV) signal to the Line Input terminals.	Rec Level control volume	TP. 1 (Lch) TP. 2 (Rch)	Check that the level meters "0 dB" light up within −11.2 dBv ±2 dB of the signal output level.	

7. FOR CT–W450R/KUCXJ, CT–W355R/KUC, KUCXJ, CT–W350R/KUC, KUCXJ, HEMXJ, HB, HBXJ, HPWXJ AND SDXJ TYPES

CONTRAST OF MISCELLANEOUS PARTS

NOTES:
- Parts without part number cannot be supplied.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

The CT–W450R/KUCXJ, CT–W355R/KUC, KUCXJ,CT–W350R/KUC, KUCXJ, HEMXJ, HB, HBXJ, HPWXJ and SDXJ types are the same as the CT–W450R/KUC type with the exception of the following sections.

Mark	Symbol & Description	Part No.										
		CT–W450R/ KUC type	CT–W450R/ KUCXJ type	CT–W355R/ KUC type	CT–W355R/ KUCXJ type	CT–W350R/ KUC type	CT–W350R/ KUCXJ type	CT–W350R/ HEMXJ type	CT–W350R/ HB type	CT–W350R/ HBXJ type	CT–W350R/ HPWXJ type	CT–W350R/ SDXJ type
	Main unit	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply
	Sub unit	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply
	H.Phone unit	Non supply	Non supply	.....	.....	.....	.....	Non supply	Non supply	Non supply	.....	.....
	Trans 1 unit	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply
⚠	Strain relife	CM–22	CM–22	CM–22	CM–22	CM–22	CM–22	CM–22B	CM–22B	CM–22B	CM–22B	CM–22B
⚠	AC Power cord	RDG1010	RDG1010	RDG1010	RDG1010	RDG1010	RDG1010	PDG1003	PDG1036	PDG1036	PDG1006	PDG1013
⚠	Fuse (1.25A)	REK–073	REK–073	REK–073	REK–073	REK–073	REK–073	.....	.....	.....	.....	.....
⚠	Fuse (1.25A)	.....	.....	.....	.....	.....	.....	REK–101	REK–101	REK–101	REK–101	REK–101
⚠	Power transformer (AC120V)	RTT1142	RTT1142	RTT1142	RTT1142	RTT1142	RTT1142	.....	.....	.....	.....	.....
⚠	Power transformer (AC220–230/230–240V)	.....	.....	.....	.....	.....	.....	RTT1146	RTT1146	RTT1146	RTT1146	.....
⚠	Power transformer (AC110/120–127/220/240V)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	RTT1147
⚠	Voltage selector	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	PSB1002
	Operation knob	RAC1561	RAC1561	RAC1563	RAC1563	RAC1561	RAC1561	RAC1561	RAC1561	RAC1561	RAC1561	RAC1561
	Door pocket (L)	RAH1751	RAH1751	RAH1792	RAH1792	RAH1751	RAH1751	RAH1751	RAH1751	RAH1751	RAH1751	RAH1751
	Door pocket (R)	RAH1789	RAH1789	RAH1790	RAH1790	RAH1750	RAH1750	RAH1750	RAH1750	RAH1750	RAH1750	RAH1750
	Shield plate	Non supply	Non supply	.....	.....	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply
	Meter panel	RAH1753	RAH1753	RAH1777	RAH1777	RAH1753	RAH1753	RAH1753	RAH1753	RAH1753	RAH1753	RAH1753
	Leg ass'y	REC–369	REC–369	REC–369	REC–369	REC–369	REC–369	.....	.....	.....	REC–369	REC–369
	Front panel ass'y	RXX1347	RXX1347	RXX1348	RXX1348	RXX1335	RXX1335	RXX1349	RXX1349	RXX1349	RXX1335	RXX1335
	Packing case	RHG1228	RHG1259	RHG1229	RHG1261	RHG1217	RHG1260	RHG1264	RHG1232	RHG1264	RHG1264	RHG1264
	Sheet	RHX–034	.....	RHX–034	.....	RHX–034	.....	.....	RHX–034	.....	.....	.....
	Mirror mat	.....	Z23–007	.....	Z23–007	.....	Z23–007	Z23–007	.....	Z23–007	Z23–007	Z23–007
	Operating instructions (English)	RRB1077	RRB1086	RRB1077	RRB1086	RRB1074	RRB1087	.....	RRB1074	RRB1087	RRB1087	RRB1087
	Operating instructions (English, French, German, Italian, Dutch, Swedish, Spanish, Portuguese)	.....	.....	.....	.....	.....	.....	RRE1043	.....	.....	.....	.....
	Operating instructions (Spanish)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	RRD1086
	Stopper	.....	.....	.....	.....	.....	.....	VEC1061	VEC1061	VEC1061	.....	.....
	Insulator	.....	.....	.....	.....	.....	.....	VNK1095	VNK1095	VNK1095	.....	.....
	Mechanism unit (Deck I) *1	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply
	Mechanism unit (Deck II) *1	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply

*1: As to Mechanism unit, refer to pages from 6 to 14.

MAIN UNIT

The main units (for CT–W355R/KUC, KUCXJ, CT–W350R/KUC, KUCXJ, HPWXJ, HB, HBXJ, HEMXJ and SDXJ types) are the same as the main units (for CT–W450R/KUC and KUCXJ types) with the exception of the following sections.

Mark	Symbol & Description	Part No.				Remarks
		CT–W450R/ KUC and KUCXJ types	CT–W355R/ KUC and KUCXJ types	CT–W350R/ KUC, KUCXJ, HPWXJ and SDXJ types	CT–W350R/ HB, HBXJ and HEMXJ types	
	IC1601	BA15218N	·····	·····	BA15218N	
	IC601	UPC1297CA	UPC1297CA	·····	·····	
	Q401. Q402	2SC1815	2SC1815	2SD1302	2SD1302	
	Q601, Q602	2SA1309A	2SA1309A	·····	·····	
	Q603	DTC124ES	DTC124ES	·····	·····	
	D1105	·····	1SS254	·····	·····	
	D601, D602	1SS254	1SS254	·····	·····	
	C1601, C1602	CEASR10M50	·····	·····	CEASR10M50	
	C1605, C1606	CEAS101M25	·····	·····	CEAS101M25	
	C1607	CEAS221M16	·····	·····	CEAS221M16	
	C404	CFTXA223J50	CFTXA223J50	CFTXA123J50	CFTXA123J50	
	C405, C406	CFTXA332J50	CFTXA332J50	CFTXA103J50	CFTXA103J50	
	C407	CFTXA332J50	CFTXA332J50	CFTXA153J50	CFTXA153J50	
	C411	CQPA682J100	CQPA682J100	CQPA162J100	CQPA162J100	
	C415, C416	·····	·····	CCCSL101K500	CCCSL101K500	
	C601, C602	CFTXA103J50	CFTXA103J50	·····	·····	
	C603, C604	CKPUYB821K50	CKPUYB821K50	·····	·····	
	C605, C606	CFTXA223J50	CFTXA223J50	·····	·····	
	C607, C608	CGCYX473K25	CGCYX473K25	·····	·····	
	C609, C610	CCCSL101K500	CCCSL101K500	·····	·····	
	C611, C612	RCG1005	RCG1005	·····	·····	
	C613	CCPUSL100J50	CCPUSL100J50	·····	·····	
	C614	CEASR10M50	CEASR10M50	·····	·····	
	C615, C617	CEAS100M50	CEAS100M50	·····	·····	
	C616	CEAS4R7M50	CEAS4R7M50	·····	·····	
	L402	RTD1063	RTD1063	·····	·····	
	L601, L602	RTD1046	RTD1046	·····	·····	
	R1605–R1608	RD1/6PM104J	·····	·····	RD1/6PM104J	
	R1613, R1614	RD1/6PM470J	·····	·····	RD1/6PM470J	
	R1615, R1616	RD1/6PM561J	·····	·····	RD1/6PM561J	
	R1617	RS1LF221J	·····	·····	RS1LF221J	
	R401, R402	RD1/6PM123J	RD1/6PM123J	RD1/6PM223J	RD1/6PM223J	
	R411	RD1/2LF201J	RD1/2LF201J	RD1/2LF151J	RD1/2LM151J	
	R412	RD1/2LF271J	RD1/2LF271J	RD1/2LF201J	RD1/2LM201J	
	R601, R602, R606	RD1/6PM223J	RD1/6PM223J	·····	·····	
	R603, R604	RD1/6PM184J	RD1/6PM184J	·····	·····	
	R605	RD1/6PM153J	RD1/6PM153J	·····	·····	
	R607, R608	RD1/6PM472J	RD1/6PM472J	·····	·····	
	R609	RD1/6PM103J	RD1/6PM103J	·····	·····	
	VR401, VR402	·····	·····	RCP1049	RCP1049	
	VR601, VR602	RCP1046	RCP1046	·····	·····	
	T402	·····	·····	ATX–043	ATX–043	

SUB UNIT

The sub units (for CT–W355R/KUC, KUCXJ, CT–W350R/HB, HBXJ and HEMXJ types) are the same as the sub units (for CT–W450R/KUC, KUCXJ, CT–W350R/KUC, KUCXJ, HPWXJ and SDXJ types) with the exception of the following sections.

Mark	Symbol & Description	Part No.			Remarks
		CT–W450R/ KUC, KUCXJ, CT–W350R/KUC, KUCXJ, HPWXJ and SDXJ types	CT–W355R/ KUC and KUCXJ types	CT–W350R/ HB, HBXJ and HEMXJ	
	D2412, D2414	SEL4914D	·····	SEL4414G	
	D2401–D2404, D2411, D2413, D2419–D2421, D2432, D2435, D2436	SEL4914D	SEL4914D	SEL4414G	
	D2204	1SS254	·····	1SS254	
	R2402, R2404	RD1/6PM181J	·····	RD1/6PM181J	
	S2204	RSG1034	·····	RSG1034	

8. SPECIFICATIONS

CT-W450R AND CT-W355R

System ..... 4-track, 2-channel stereo
Heads ..... "Hard permalloy" recording/playback head × 1
"Hard permalloy" playback head × 1
"Ferrite" erasing head × 1
Motors ..... DC servo motor × 2
Wow and Flutter ..... No more than 0.10% (WRMS, JIS)
Fast Winding Time ..... Approx. 120 seconds (C-60 tape)
Frequency Response (at —20 dB recording level)
Metal Tape ..... 30 to 16,500 Hz
Chrome Tape ..... 30 to 16,000 Hz
Normal Tape ..... 30 to 16,000 Hz
Signal-to-Noise Ratio
Dolby NR off ..... More than 56 dB
Noise Reduction Effect
Dolby B-type NR ON ..... More than 10 dB (at 5 kHz)
Dolby C-type NR ON ..... More than 19 dB (at 5 kHz)
Harmonic Distortion ..... No more than 0.8% (at 0 dB)
Input (Sensitivity)
LINE (INPUT) ..... 63 mV (Input impedance 56 kΩ)
Output (Reference level)
LINE (OUTPUT) ..... 316 mV (Output impedance 4.5 kΩ)
Headphones
(CT-W450R only) ..... 0.25 mW (Output impedence 8 Ω)

Miscellaneous

Power requirements ..... AC 120V, 60 Hz
Power consumption 16W
Dimensions ..... 420 (W) × 120 (H) × 265 (D) mm
16-9/16 (W) × 4-3/4 (H) × 10-7/16 (D) in.
Weight ..... 3.9 kg (8 lbs. 10 oz.)

Accessories

Operating instructions 1
Connection cord with pin plugs 2
Remote control cord 1
CD-DECK SYNCHRO control cord 1

Features

- DOLBY HX PRO recording function
- DOLBY B/C types NR
- Music search over ±15 selections
- Synchronized copy start
- High-speed and normal-speed copy (Deck I → Deck II)
- Relay playback/blank skip
- 6-segment LED level meter
- 3-digit mechanical tape counter (for Deck II)
- Automatic recording mute
- Automatic tape selectors
- System remote control available
- Timer recording
- Timer playback (Automatic relay on)
- CD-DECK SYNCHRO function
- Headphones jack (CT-W450R only)
- Automatic reverse (except Deck I of the CT-W355R)

NOTE
Specifications and design subject to possible modifications without notice due to improvements.

CT-W350R

System	4-track, 2-channel stereo
Heads	"Hard permalloy" recording/playback head × 1
	"Hard permalloy" playback head × 1
	"Ferrite" erasing head × 1
Motors	DC servo motor × 2
Wow and Flutter	
U.K. and European models	No more than 0.08% (WRMS)
	No more than ±0.19% (DIN)
Other models	No more than 0.10% (WRMS)
Fast Winding Time	Approx. 120 seconds (C-60 tape)
Frequency Response (at −20 dB recording level)	
Metal Tape	30 to 16,500 Hz
Chrome Tape	30 to 16,000 Hz
Normal Tape	30 to 16,000 Hz
Signal-to-Noise Ratio	
Dolby NR off	More than 56 dB
Noise Reduction Effect	
Dolby B-type NR ON	More than 10 dB (at 5 kHz)
Dolby C-type NR ON	More than 19 dB (at 5 kHz)
Harmonic Distortion	No more than 0.8% (at 0 dB)
Input (Sensitivity)	
LINE (INPUT)	63 mV (Input impedance 56 kΩ)
Output (Reference level)	
LINE (OUTPUT)	316 mV (Output impedance 4.5 kΩ)
Headphones (U.K. and European models only)	0.25 mW (Output impedence 8 Ω)

Miscelllaneous

Power requirements	
U.S., Candaian model	AC 120 V, 60 Hz
U.K. and Australian models	AC 230—240 Volts ~, 50/60 Hz
European model	AC 220—230 Volts ~, 50/60 Hz
Multi-voltage model	AC 110 V/120 V—127 V/220 V/240 V (switchable), 50/60 Hz
Power consumption	
U.S., Canadian model	14 W
Other models	21 W
Dimensions	420 (W) × 120 (H) × 265 (D) mm
	16-9/16 (W) × 4-3/4 (H) × 10-7/16 (D) in.
Weight	3.9 kg (8 lbs. 10 oz.)

Accessories

Operating instructions	1
Connection cord with pin plugs	2
Remote control cord	1
CD·DECK SYNCHRO control cord	1

Features

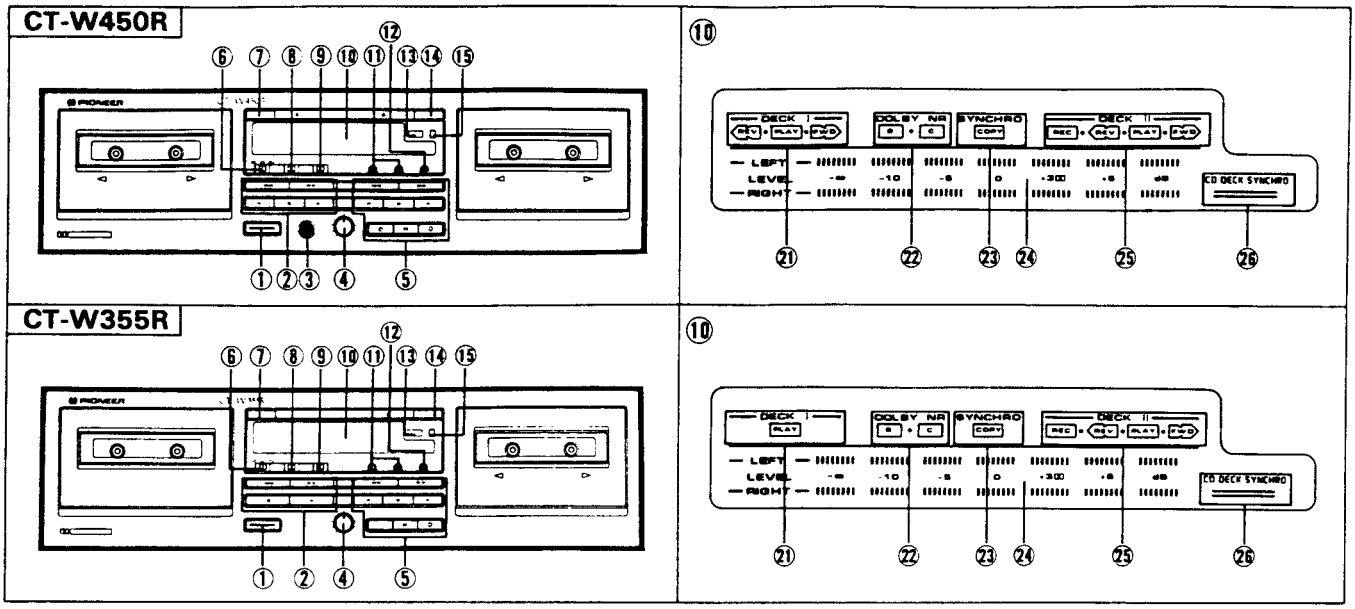
- DOLBY NR B/C types
- Music search over ±15 selections
- Synchronized copy start
- High-speed and normal-speed copy (deck I — deck II)
- Relay playback/blank skip
- 6-segment LED level meter
- 3-digit mechanical tape counter (for deck II)
- Automatic recording mute
- Automatic tape selectors
- System remote control available
- Timer recording
- Timer playback (Automatic relay on)
- CD·DECK SYNCHRO function
- Headphones jack (U.K. and European models)
- Automatic reverse

NOTE

Specifications and design subject to possible modifications without notice due to improvements.

9. PANEL FACILITIES

CT-W450R AND CT-W355R



① POWER (STANDBY/ON) switch

NOTE:
The POWER switch activates the secondary transformer only. Even when the switch is in the STANDBY position, there will be a power flow to the deck's circuits as long as the power cord is connected to a power outlet.

② Deck I operation buttons

- ◀◀ Fast reverse/Music search
- ▶▶ Fast forward/Music search
- ▶ Forward playback
- ■ Stop
- ◀ Reverse playback (CT-W450R only)

③ Headphones (PHONES) jack (CT-W450R only)

④ Recording level control (REC LEVEL)

⑤ Deck II operation buttons

- ◀◀ Fast reverse/Music search
- ▶▶ Fast forward/Music search
- ▶ Forward playback
- ■ Stop
- ◀ Reverse playback
- O Recording mute
- ▮▮ Pause
- ● Recording

⑥ Reverse mode switch (REV MODE)

- CT-W450R: For both Decks I and II.
- CT-W355R: For Deck II only

⑦ Deck I eject button (EJECT)

- If the tape is moving (recording, playback, tape winding, etc.), press the stop (■) button before pressing this button.

⑧ Dolby* NR switch (B/OFF/C)

⑨ Timer mode — Relay/Skip play switch (TIMER REC/OFF/PLAY — RELAY/SKIP)

⑩ Function display

⑪ Synchro copy buttons (SYNCHRO COPY I ▷ II)

- NORMAL SPEED: Copying at normal speed.
- HIGH SPEED: Copying at twice normal speed.

⑫ CD·DECK SYNCHRO recording button (CD SYNCHRO)

⑬ Deck II tape counter (DECK II COUNTER)

⑭ Deck II eject button (EJECT)

- If the tape is moving (recording, playback, tape winding, etc.), press the stop (■) button before pressing this button.

⑮ Tape counter reset button (RESET)

Function display

㉑ Deck I tape transport mode indicators

㉒ Dolby NR indicators (B/C)

㉓ Synchro copy indicator (COPY)

- NORMAL SPEED: lights
- HIGH SPEED: flashes

㉔ Level meter

- The DX beside the +3 mark indicates the reference level for the Dolby NR system.

㉕ Deck II tape transport mode indicators

㉖ CD·DECK SYNCHRO recording indicator (CD·DECK SYNCHRO)

*

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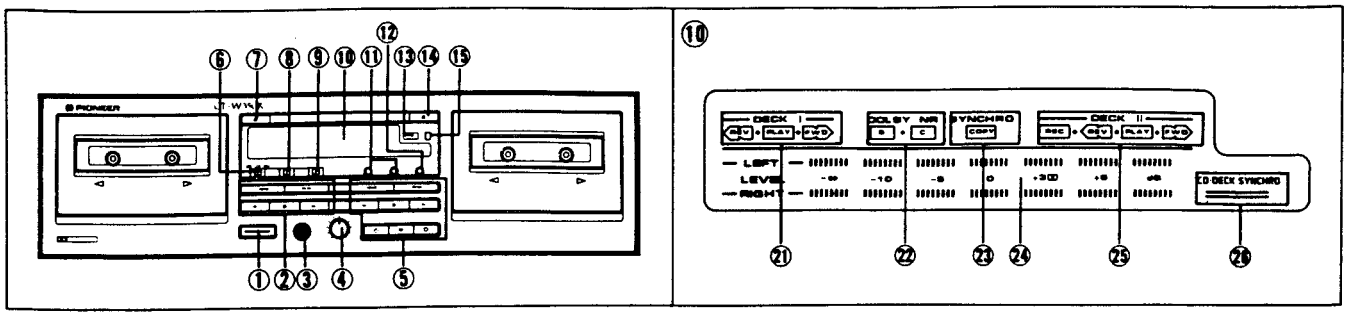
CT-W350R



① POWER (STANDBY/ON) switch

NOTE:
The POWER switch activates the secondary transformer only. Even when the switch is in the STANDBY position, there will be a power flow to the deck's circuits as long as the power cord is connected to a power outlet.

② Deck I operation buttons

- ◀◀ Fast reverse/Music search
- ▶▶ Fast forward/Music search
- ▶ Forward playback
- ■ Stop
- ◀ Reverse playback

③ Headphones (PHONES) jack (U.K. and European models)

④ Recording level control (REC LEVEL)

⑤ Deck II operation buttons

- ◀◀ Fast reverse/Music search
- ▶▶ Fast forward/Music search
- ▶ Forward playback
- ■ Stop
- ◀ Reverse playback
- ○ Recording mute
- ❚❚ Pause
- ● Recording

⑥ Reverse mode switch (REV MODE)

⑦ Deck I eject button (EJECT)

- If the tape is moving (recording, playback, tape winding, etc.), press the stop (■) button before pressing this button.

⑧ Dolby* NR switch (B/OFF/C)

⑨ Timer mode — Relay/Skip play switch (TIMER REC/OFF/PLAY — RELAY/SKIP)

⑩ Function display

⑪ Synchro copy buttons (SYNCHRO COPY I ▷ II)

- NORMAL SPEED: Copying at normal speed.
- HIGH SPEED: Copying at twice normal speed.

⑫ CD·DECK SYNCHRO recording button (CD SYNCHRO)

⑬ Deck II tape counter (DECK II COUNTER)

⑭ Deck II eject button (EJECT)

- If the tape is moving (recording, playback, tape winding, etc.), press the stop (■) button before pressing this button.

⑮ Tape counter reset button (RESET)

Function display

㉑ Deck I tape transport mode indicators

㉒ Dolby NR indicators (B/C)

㉓ Synchro copy indicator (COPY)

- NORMAL SPEED: lights
- HIGH SPEED: flashes

㉔ Level meter

- The DD beside the +3 mark indicates the reference level for the Dolby NR system.

㉕ Deck II tape transport mode indicators

㉖ CD·DECK SYNCHRO recording indicator (CD·DECK SYNCHRO)

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